The RUBBER AGE

The Only Twice - a - Month Rubber Publication

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FIRESTONE PRICE CUT ON HIGH PRESSURE TIRES CAUSES OTHERS

Reduction of From 3 to 6 Per Cent, Effective October 20 Announced — Goodyear, Goodrich, Miller and United States Make Similar Reductions

The rubber industry was surprised recently when the Firestone Tire & Rubber Co. announced a reduction of from 3 to 6 per cent in the price of high pressure cord and fabric tires. The cut became effective Oct. 20. No price changes are to be made in balloon, solid or cushion tires.

It was the Firestone company which was the first to announce a reduction about six months ago. This announcement was quickly followed by simi ar ones by the other large rubber companies. The present cut, although it came as a complete surprise to all in the trade, in view of the rising cost of raw materials, was quickly met by similar announcements by the Goodyear Tire & Rubber Co., the B. F. Goodrich Co., the United States Rubber Co., and the Miller Rubber Co. Other rubber manufacturers are expected to take similar action.

No Cut on Balloons

Many in the industry feel that balloon tire prices will be maintained at the present level, as they believe that present prices of balloons are no bar to owners of the higher-priced cars. They state that the maintenance of present price levels will be equivalent to a cut, as far as manufacturers are concerned, as the cost of materials is rising. Both tire fabrics and rubber are in a strong position. Rubber is quoted at a higher price at this writing than in months. The price has advanced from 17½ cents in June to 29¼. Many brokers anticipate 30 cent rubber this winter.

They base this belief on the fact that there is now only about 30,000 tons of rubber in the hands of dealers and manufacturers. With the tire industry consuming crude rubber at the rate of some 20,000 tons a month, this is only 45 days supply. Compared with stocks three months ago, this is a reduction of 25,000 tons.

Reports place daily tire production in Akron at 97,000. The Goodyear Tire & Rubber Co. is manufacturing 30,000 tires and about 40,000 tubes a day. The total production of the B. F. Goodrich Co. is conservatively estimated at 20,000 and that of Firestone at 28,000. The remainder of the total production is accounted for by Miller, General, India, Mohawk, Star, Swinehart, Seiberling and other factories.

Stocks in the hands of manufacturers and dealers have dropped to 5,000,000 tires, a decrease of 1,000,000 in the last six months.

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RUBBER FACTORIES IN CANTON DISTRICT BUSY

Production in the rubber factories in the Canton, Ohio, district is the greatest since the war. The Triangle Tire & Rubber Co., which took over the plant of the Gordon Tire & Rubber Co., is producing 300 tires a day, with operations on a five-day basis. The Monarch Tire & Rubber Co., Hartville, reports an output of 400 casings a day. As soon as the Wilson Rubber Co., manufacturers of surgeons' gloves, occupies its new four-story factory addition, which was recently completed, it will increase production 35 per cent. The Wilson company has been operating on a 24-hour schedule for many months.

Defiance Buys Central Plant

The newly organized Defiance Rubber Co. has purchased the ruins of the Central Rubber Reclaiming Co.'s plant, in Defiance which was partly razed by fire last year. Charles L. Kentner, who promoted organization of the new company, has been made manager.

Stanley Roberts, of the Bowling Green Rubber Co., Toledo, is president of the Defiance company, and has associated with him as incorporators: G. Sheets, L. Kirsch, M. R. Higgins and G. Van Vlear, all of Toledo.

Ruins of the fire have been cleared away, one new building constructed and repairs completed, so that a force of ten workmen have been producing goods for the past month. The old three-story building, 42 x 153 ft., which escaped the fire, has been reconditioned as the principal structure of the new plant. It is supplemented by a new 25 x 75 foot building for the devulcanizer. The boiler room also has been restored to service. The products of the new company are hard rubber dust, sheet hard rubber and reclaimed rubber from fabric free scraps.

Lease Boston Loft

Moore & King, Inc., manufacturers of rubber hose and accessories, have leased for a term of years the fourth floor in the building at 221 High St., Boston.

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FRANK A. KISSELL TO RETIRE ON FULL PAY

Frank A. Kissell, manager of the Philadelphia branch of the Kelly-Springfield Tire Co. since 1895 and one of the best known figures in the eastern tire trade, is it has just been announced, to retire on full pay on January 1.

Mr. Kissell's connection with the Kelly company dates from the days when it was the Rubber Tire Wheel Company. He was first employed in May, 1895, as a special representative to sell carriage tires, but after a few weeks' experience was put in charge of the company's newly opened Philadelphia branch, then located at 1204 Girard Ave. A month later, in August, 1895, he had the pleasure of installing the 100th set of Kelly carriage tires sold by the Philadelphia branch.

The Kelly company had at that time the only rubber tire that would stay on the rim, and one of Kissell's first successes was equipping the rolling chairs on the Atlantic City boardwalk with rubber tires that did not come off. The wheel chairs at that time used cushion tires of another make on the old crescent rims. The tires were constantly coming off and the company that operated the chairs was beginning to despair of ever finding a way to make them stay on. Kissell took a set of chair wheels to Philadelphia with him, had them channeled and equipped with his internal wire tires and the result was so satisfactory that for years all the boardwalk wheelchairs rolled on Kellys.

Later, when the company went into the manufacture of pneumatic and truck tires, the business of the branch expanded into larger and larger territory, and for the past year or two an amount of traveling has been necessary that the company felt it would no longer be justified in asking Kissell to do. Finally it was decided that he ought to be relieved of the physical burden of responsibility for the territory, and he has just sent out announcements to his trade that on January 1 he is retiring on full pay.

Frank A. Kissell

TO INVESTIGATE RUBBER INDUSTRY PRICE LEVELS

The first attempt to investigate the level of prices received by the American manufacturer for his goods has been undertaken by the National Industrial Conference Board, 247 Park Avenue, New York City. Its ultimate purpose is to develop an index of factory prices for a large number of representative manufactured commodities, a highly important economic indicator now lacking in basic industrial information. When such an index is completed, it will be possible for the first time, says the board, to compare the trend of these changes with the trend of wholesale and retail prices. Such a comparison, it is hoped, will provide manufacturers with a much needed guide to the adjustment of prices and the elimination of waste.

It was announced at the offices of the board that the program is already under way for the years 1914, 1919, 1921, and as data becomes available, for 1923. In this connection, the board has effected a comparison of average factory prices in the rubber industry in 1923 with those prevailing in previous census years, based on preliminary figures from the 1923 census of manufactures.

29,000 TONS OF RUBBER IMPORTED IN SEPTEMBER

According to figures compiled and recently issued by the Rubber Association of America, importations of crude rubber into the United States during September totaled 29,000 tons which is more than double the importations in the same month last year when 11,611 tons entered this country. Of this 29,000 tons, 28,362 tons are plantations, 123 are Paras, 263 Africans, 85 Centrals and 167 Guayule. Of the 28,362 tons of plantations, 10,980 tons were shipped from Singapore, 6,149 tons from London and 2,217 tons from Colombo.

New York received 26,222 tons of plantations, Baltimore 803, Boston 383, Philadelphia 85, and Los Angeles 869. Seventy-four tons of waste, 15 tons of Balata and 557 tons of miscellaneous gums not otherwise classified were imported.

Meade Rubber Adds to Line

The Meade Rubber Co., Stoughton, Mass., has begun the manufacture of raincoats. The new line is being manufactured in the recent addition where about 50 additional employees have been placed at work. According to officials of the firm, another addition may be erected in the near future to take care of the growing business.

Charles Kartstein, former foreman of the coat room of the Stoughton Rubber Co., has been placed in charge of the new department.

The new raincoat has been called "Gos-Mer-Ett." It weighs only 20 ounces and is described in the advertising literature as "beautiful in appearance with changeable silky finish effect, yet guaranteed to be absolutely waterproof."

To Make Rubber Clothing

Roberts & Rosenfield, Inc., New York City, was recently incorporated with 200 shares of common stock of no par value to manufacture rubber clothing. Directors and subscribers are L. I. Marcus, 957 Kelly St., Bronx, N. Y.; Anna U. Mark, 1249 Ocean Ave., Brooklyn, N. Y.; and Helen Barstow, 257 West 12th St., New York. The attorney for the new firm is Lawrence Berenson, 27 William St., New York.

Eclat Declares Dividend

The regular quarterly dividend of two per cent on all preferred stock on record October 1 was declared recently by the Eclat Rubber Co., Cuyahoga Falls, Ohio. According to Clifford Reiss, secretary, the company has never missed a dividend on preferred stock. He stated that business is constantly growing in volume.

To Sell Interlocking

The Akron factory of the Interlocking Tire & Rubber Co., which went into bankruptcy several years ago, is expected to be sold by receivers within a week or two, according to an announcement made by Stanley Delinger, trustee in bankruptcy for the company.

According to Harry L. Snyder, referee in bankruptcy, who recently received a petition requesting a receivership sale, the delay in selling the plant is due to the fact that interested parties must be first consulted. The property of the company is estimated to be worth $650,000. The liabilities of the Interlocking company are placed at $100,000.

Burrows Increases Capital

The Burrows Manufacturing Co., 419 Sprague Ave., Spokane, Wash., manufacturers of rubber specialties, was recently reincorporated with a capital stock of $100,000. The company recently added a solid rubber ball to its line and is considering other additions. The officers are George A. Burrows, president; C. P. McFadden, vice president; F. H. Fuller, secretary and J. H. Burrows, treasurer and general manager. The board of directors consists of the officers and Alvin I. Butler.

Takes Over Union Business

A. S. Carlton, who for the past four years has been associated with the Union Chemical Co., Boston, Mass., recently announced that the board of directors had voted to liquidate the affairs of the company. Mr. Carlton has taken over in his own name the manufacturing connections previously held by the Union company. His office is located at 27 Haymarket Square, Boston, Mass.

ZR-3 BRINGS ALL ZEPPELIN RIGHTS TO GOODYEAR SUBSIDIARY AT AKRON

All Zeppelin Dirigible Manufacturing will be Done Henceforth by the Goodyear-Zeppelin Co.—12 German Experts to Work on New Airship

The landing of the ZR-3 at Lakehurst, N. J. Oct. 15 automatically transferred from Friedrichshafen, Germany, to Akron, Ohio, all Zeppelin dirigible manufacturing activities. All future construction of rigid dirigibles under Zeppelin patents will be henceforth carried on at Akron by the Goodyear-Zeppelin Co., which obtained exclusive rights for all of North America to the Zeppelin patents several months ago.

Under the terms of the agreement, 12 experts from the Zeppelin plant at Friedrichshafen, headed by Dr. Carl Arnstein, chief Zeppelin designer will go to Akron early in November to superintend the construction of other Zeppelin commercial ships. According to W. C. Young, manager of the Goodyear aeronautical department, work will be begun at once on an airship similar to the Shenandoah and the ZR-3 which will be offered to the United States Government in 1925.

Zeppelin to Retain Interest

The Goodyear-Zeppelin Co. becomes a subsidiary of the Goodyear Tire & Rubber Co. No cash consideration was involved in the acquisition of the German Zeppelin rights, but under the terms of acquisition the German Zeppelin company will retain a 25 per cent interest in all Zeppelin type aircraft manufactured in America by the Goodyear-Zeppelin Co.

It is P. W. Litchfield, first vice president and factory manager of the Goodyear Tire & Rubber Co. and for many years a leader in aeronautical development work, who is largely responsible for obtaining the Zeppelin patents for America. It is planned to enlarge the Goodyear dirigible hangars near Akron to accommodate ships of the Zeppelin type. The Goodyear company is now working on a large semi-rigid dirigible to act as a mother airship for airplanes.

L. D. Gardner, publisher of THE RUBBER AGE, was a guest at the dinner given by the Goodyear-Zeppelin Co. October 17 at the Waldorf-Astoria, New York City, to Dr. Hugo Eckener and the officers who helped him fly the ZR-3 from Germany.

Goodyear Bonds Called

Dillon, Read & Co., sinking fund agents for the Goodyear Tire & Rubber Co., announced recently that $750,000 of the amount of first mortgage 20-year, 8 per cent sinking fund gold bonds had been called by lot for redemption by the Union Trust Co., Cleveland, Ohio. The bonds called are payable on November 1, 1924, at the office of the Central Union Trust Co. of New York, or at the principal office of the Central Union Trust Co. in Cleveland at 120 per cent of the amount thereof and accrued interest.

The numbers of the $1,000 bonds drawn range from 53 to 27,605. The numbers of the $500 bonds selected for redemption range from 82 to 2,896 and for the $100 bonds from 3 to 3,207.

It is reported that officers of the Goodyear Tire & Rubber Co. are considering the advisability of a readjustment of the capital stock to clear up all back dividends on the two classes of stock on which dividends are overdue.

The company plans, it was said in the New York financial district, to eliminate all payments due by an issue of common stock which will be offered to stockholders in lieu of the dividends. As of June 30, 1924, there was 19 per cent due in dividends on the management preferred stock and 26¼ per cent on the 7 per cent preferred stock.

LONDON SEES LARGER OUTLETS IN EUROPE

(Special to THE RUBBER AGE*)*

A marked improvement in the Continental European trade is pleasing rubber dealers in Mincing Lane as much as the prospect of increasing demands from America. France is now buying with more freedom than for years past and this year, it is anticipated, will absorb about 40,000 tons. Germany is also actively in the market and will become a bigger purchaser as credit facilities are increased. This and the continuous reduction of London stocks are the two most encouraging features of the trade at the moment.

With regard to American consumption, London dealers find the greater transatlantic interest easy to understand. Despite the low figure of 64,418 tons at which United States stocks were returned at the end of June, American buyers were able for a time to continue their "hand-to-mouth" policy, and by skilful buying tactics to prevent a rise in commodity values. The intimation that exports would be cut by 5 per cent on August 1 was treated with considerable skepticism, but there is now the probability of a further reduction in November owing to the course of values during the first half of the current quarter. In fact, Mincing Lane is looking forward confidently to a further 5 per cent restriction of output on November 1. This means that the amount of rubber which each estate may export under license is getting less and less. Unless the price of rubber for last month, this month and next month works out at an average of 1s. 3d (which is very doubtful now that we are two-thirds through the present quarter), this fresh cut would operate automatically until the beginning of next February at any rate.

Organize Rubberizing Firm

The Rubberizing & Manufacturing Co., St. Louis, Mo., was recently granted a charter. Authorized capital is $29,000. The firm will manufacture rubber, waterproof fabrics and rubber cement. Incorporators are John Zabrosky, F. B. Mulford, R. L. Randell and Annie Ramsey, all of St. Louis.

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Azo ZZZ Lead Free
Azo ZZ—Under 5% Leaded
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RESTRICTION LOSING POPULARITY IN GREAT BRITAIN AND COLONIES

Favorable Attitude of British Press Contrasts with the Lukewarm Opinion of Rubber Growers—Effects of Stevenson Plan said to be Inequitable

(Special to THE RUBBER AGE)

Although the Stevenson scheme at last shows some promise of accomplishing the purpose for which it was instituted, a certain amount of criticism continues to be directed against it. So far as the Press is concerned, however, the tendency is, with one notable exception, either to be slightly favorable toward the scheme or to be entirely non-committal.

Only One Exception

The exception is the London *Times*, acknowledged as the best-informed British daily newspaper. The *Times* thinks there is not quite so much enthusiasm for the restriction policy as there was when it was first introduced. "Even its champions," it says, "admit that it has disappointed their hopes, as in our judgment it was bound to do. It would be foolish to deny that restriction of production by the British estates, if drastic enough and continued long enough, would lead to a rise in price—but at what a cost. And would the British industry be in a better position in the long run by virtue of it? Many writers who originally advocated restriction by compulsion are criticizing it now that they see its effects, and there is an increasing number of rubber reports which point to the undesirable consequences of restriction."

Another view, and one that has so far been neglected by both the critics and supporters of restriction (although held by a not inconsiderable section of the industry) is, briefly, as follows: Recent rubber companies statutory reports have almost without exception laid stress on the fact that production and other costs tend to increase notwithstanding the efforts that have been made during the last year or so to effect economies in this way. Although it is not agreed that Dutch output will eventually defeat the ideals at which the Stevenson scheme aims, it is felt that estates which are getting their outputs restricted at the rate of roughly 5 per cent every three months will be unable to effect any reduction in their all-in costs, while at the same time selling less rubber at advanced prices.

The attitude of the rubber-producing companies themselves in regard to restriction may be characterized as "lukewarm." The chairman of several have recently admitted disappointed with the results so far. Others are frankly hostile, but more in private than in public.

F. W. Pierce Quits Goodyear

Frank W. Pierce, personnel manager for the Goodyear Tire & Rubber Co., Akron, Ohio, recently resigned to join in a similar capacity the Standard Oil Co. of N. J., with offices in New York City. After being graduated from Cornell in 1916 Mr. Pierce entered the Goodyear factory where he had charge of the handling and acceleration of government work during the war. When the Inter-Plant Relations Department was organized he was placed in charge of it and helped to organize the personnel of the California plant. When Harry E. Blythe went to the California plant as general superintendent about two years ago, Mr. Pierce was made personnel manager.

Ohio Balloon Co. Formed

The Ohio Balloon Co., Ashland, Ohio, has been incorporated to manufacture and sell toy balloons and similar dipped, pressed and molded rubber goods, such as rubber gloves and bathing caps. Authorized capital is 500 shares of no par value. D. S. Knowlton, Madge Test, D. C. Van Buren, Joseph B. Corrigan and Don Douglas, all of Cleveland are the incorporators.

I.R.I. Announces Program

W. F. V. Cox, secretary of the Institution of the Rubber Industry, 10 Charing Cross Road, London, recently issued to the British trade a small folder containing the program of papers to be read before the London and District Section for the session 1924-1925.

The program follows:

MEETINGS HELD AT THE ENGINEERS CLUB, LONDON

1924
Sept. 1—Professor G. S. Whitby, "The Acidity of Raw Rubber"
Sept. 29—First Annual Meeting of Section
Oct. 6—Edward Anderson, A.I.C., "Sulphur"
Nov. 3—C. W. H. Howson, B.Sc., "Gutta Percha: Preparation and General Properties"
Nov. 17—Dr. A. Van Rossem, Joint Meeting with the Society of Chemical Industry
Dec. 1—Major B. J. Eaton, O.B.E., F.I.C., "Research Work on the Plantation"

1925
Jan. 5—A. Healey, B.Sc., "Mechanical Structure of Rubber"
Feb. 2—W. G. Martin, F.I.C., "The Calender in the Rubber Industry."
Mar. 2—Fordyce Jones, "Standarized Rubberware"
Apr. 6—Not fixed

MEETINGS HELD AT THE TEXTILE INSTITUTE, MANCHESTER

1924
Oct. 16— Herbert Standring. "Some Problems in the Rubber Industry"
Nov. 26—Dr. Samuel S. Pickles, "The Treatment of Rubber Previous to Vulcanization"

1925
Jan. 15—John Adamson, "History of the Rubber Industry in Manchester"
Feb. 19—R. W. Lunn, M.Sc., Title not received
Mar. 19—Joint Meeting Society of Chemical Industry, Date reserved

The following Papers have so far been arranged for Birmingham:—

H. M. Dunkerley, A.G.G.I., "The Methods of Cooling Applicable to Rubber and Rubber Machinery"
Dr. C. S. Myers, "Industrial Psychology as Applied to the Rubber Industry"

Anderson Rubber Organized

The Anderson Rubber Corp., Cleveland, Ohio, was recently incorporated by J. A. Anderson and J. B. Bander. Authorized capital is 200 shares of common stock of no par value and $20,000 in preferred shares.

Berkshire Rubber Formed

Jessie F. Herbst, P. Frank Herbst and James M. Rosenthal recently incorporated the Berkshire Rubber Co. of Mass., Inc., Pittsfield, Mass. The firm will deal in rubber, leather and metal goods. Capital is 100 shares of no par value.

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BALLOON PRODUCTION INCREASED IN AUGUST

Rubber Association Statistics Show Rise also in Balloon Tire Shipments and Inventory—High Pressure Production was 501,166, Compared with 365,213 in July.

The monthly statistical statement recently issued by the Rubber Association shows production of low pressure tires by manufacturers reporting was 501,166 in August, compared with 365,213 in July. Balloon inventory was 765,002 in August and 715,844 in July. Shipments of high pressure tires also increased in August when 435,572 were shipped in comparison with 393,132 shipped in July.

Production, inventory and shipments of low pressure inner tubes also showed a corresponding increase. Production was 427,302 in August, compared with 311,333 in July; inventory was 751,732, compared with 708,098; and shipments were 369,335, compared with 308,238.

Production and shipments of high pressure cord tires increased in August but inventories dropped. In August 1,983,530 high pressure cords were manufactured, in comparison with 1,632,380 in July; shipments in August were 2,663,087, against 2,148,581 in July; and inventory was 2,679,205 in August against 3,028,785 in July. In August 750,045 fabric tires were produced and 1,094,455 shipped. Inventory for that month was 1,032,809.

Nine companies reported that they had manufactured 37,624 solid tires and 14,892 cushion tires in August, against a total production of both types of 42,498 in July, an increase of 10,018. Shipments of solid and cushion tires were 60,684 in August, against 51,449 in July; inventory was 183,159, compared with 202,850 in July.

Reed Rubber Bankrupt

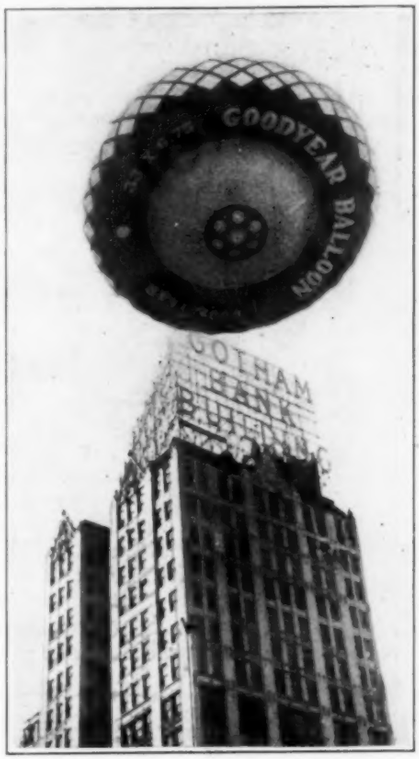
John D. Reed, president and general manager of the Reed Rubber Co., conducting a factory at 1156 Dorr St., Toledo, Ohio, recently filed a voluntary petition in bankruptcy in Common Pleas Court. It is said that the company has orders aggregating $2,000 on its books but is unable to manufacture and ship the goods because of the lack of sufficient capital to continue operations. Mr. Reed said that his factory had virtually suspended production. Liabilities are given in the petition as $2,000.

Judge Martin appointed James M. Eckles receiver.

GOODYEAR BALLOON TIRE ADVERTISED IN NEW WAY

The Goodyear Tire & Rubber Co. recently conceived a novel way to advertise its balloon tires. A large captive balloon shaped and colored like a balloon tire on a disc wheel was flown aloft at Columbus Circle, which is the hub of the automotive and rubber industry in New York City. The resemblance to the Goodyear product was so striking that the stunt attracted much attention and considerable favorable comment. The balloon advertisement vied with the gigantic electric signs for attention as it swung over the heart of "Motor Row."

The accompanying photograph shows how the balloon looked in the sky.



International

Goodyear's Novel Scheme

COMMERCE DEPARTMENT MAKES TIRE SURVEY

The Department of Commerce is making its first semi-annual survey of stocks of tires and tubes held by dealers in the United States. The preliminary statistics for October 1 compiled by the Rubber Division and the Domestic Commerce Division of the Department show 1,127,306 tires in the hands of the 21,801 dealers reporting. Balloon casings to the number of 103,990 by 6,967 dealers.

Smith & Heller Formed

Smith & Heller, Inc., San Francisco, Cal., was recently granted a charter by the secretary of state. The company will manufacture rubber footwear and other rubber wearing apparel. Authorized capital is $20,000. Incorporators and directors are Dillard M. Smith, Abraham M. Heller and Walter L. Anderson.

To Make Radio Rubber

The Celestro Rubber Co., Boston, Mass., has been incorporated by Albert Swerdlove, Louis Kumins, and Samuel Aisner, all of Boston, to manufacture rubber goods for use in radio apparatus. Authorized capital is $50,000.

DECLARES RUBBER WILL SUPPLANT OTHER PAVING

Edward S. Dorr in Address before American Society for Municipal Improvements at Boston Says Rubber will Eventually Replace Asphalt, Stone and Wood.

Speaking before the 30th annual convention of the American Society for Municipal Improvements at the Copley-Plaza, Boston, Edgar S. Dorr, consulting engineer and engineer of special work in sewer service for the city of Boston, declared that rubber paving will eventually cover the streets of instead of asphalt, stone and wood.

Only Two Bars to Universal Use

The speaker said that only two achievements are necessary to make rubber the ideal pavement. These are a better means of attaching rubber blocks to concrete bases and a decrease in the cost of production. Mr. Dorr told the society that rubber has better wearing qualities than either stone or wood. He held up the example of the rubber paving in London which was laid 53 years ago and only needed renewal last year.

He also spoke of the success of the experiment being tried on the Northern Ave. bridge in Boston where the stretch of rubber paving is giving much better service than wooden planking. Rubber, he maintained, is probably the best material ever produced for paving draw spans and bridges where there is a certain give to the structure and where paving is subjected to wear which necessitates frequent replacement when other materials are used.

Thick Blocks Unnecessary

Mr. Dorr said that the long-wearing qualities of rubber paving eliminate the necessity of using thick blocks. The combination of crude and reclaimed rubber for the manufacture of paving produces an ideal material which is tough, elastic and enduring.

Believing that the complete address of Edgar S. Dorr will interest rubber manufacturers, the Editor plans to publish it complete in an early issue of THE RUBBER AGE.

Tests are being made with rubber paving in four large cities.

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BEGIN CONSTRUCTION OF ARCHER ADDITION

Excavations were started recently in preparation for the erection of the addition to the factory of the Archer Rubber Co., Milford, Mass. The new building will be of wood to conform with the present structure. It will be four stories high and afford a floor space of 22,500 square feet. When the addition has been completed and equipment has been installed, the capacity of the Archer company will be increased one-third.

DAVIDSON PUSHING SALE OF SAMPLE ASSORTMENT

The Davidson Rubber Co., Boston, Mass., is pushing the sale of its assortment case containing 11 No. 25 Radiant fountain syringes; 8 No. 1 Velvent water bottles; and 4 No. 12 Velvent Combination water bottles and fountain syringes. Jobbers are supplying this assortment to pharmacies and other retailers at $14.00.

Polson Reports Good Sales

A forty per cent increase in the sales of automobile tubes and accessories during the past twelve months is reported by the Polson Rubber Co. of Cleveland, Ohio. H. B. Polson, president of the company, is in active charge of the factory which was moved from Cleveland to Garretsville last year.

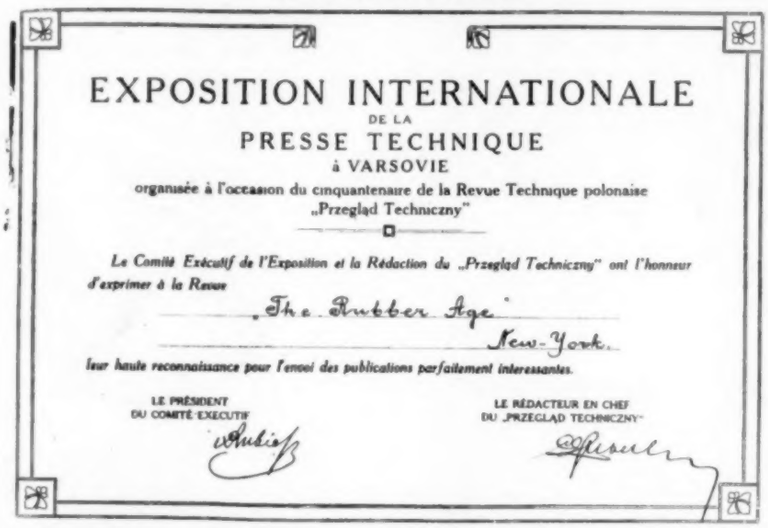
The Cleveland headquarters at 1783 East Eleventh St. are under the direction of Ed Moorby, treasurer, while the eastern sales department is under the management of Frank P. Harrington, formerly manager of accessory sales for the Miller Rubber Co.

The Polson company, the largest manufacturer of tire accessories in the United States, makes the Polson-McWade automatically sealed tube. Sales are the best they have been in the company's sixteen years of business states Mr. Harrington.

Calistco Rubber Formed

Headed by A. A. Frambach, the newly organized Calistco Rubber Co. will locate in Los Angeles, Cal. Authorized capital is $50,000. Incorporators are George W. McCune, L. S. Smart, C. S. McCune and M. Cazier.

THE RUBBER AGE AWARDED CERTIFICATE


EXPOSITION INTERNATIONALE
DE LA
PRESSE TECHNIQUE
à VARSOVIE
organisée à l'occasion du cinquantenaire de la Revue Technique polonaise
„Przegląd Techniczny"

Le Comité Exécutif de l'Exposition et la Rédaction du „Przegląd Techniczny" ont l'honneur d'exprimer à la Revue

The Rubber Age
New-York.

leur haute reconnaissance pour l'envoi des publications parfaitement interessantes.

LE PRÉSIDENT DU COMITÉ EXECUTIF

LE RÉDACTEUR EN CHEF DU „PRZEGLĄD TECHNICZNY"

Translation: **International Exposition of Technical Papers at Warsaw, organized to celebrate the Fiftieth Anniversary of the Polish technical journal "Przeglad Techniczny." The Executive Committee of the Exposition and the Editorial Staff of "Przeglad Techniczny" have the honor of expressing to THE RUBBER AGE, New York, their highest commendation for sending its most interesting publication.**

Eagle Rubber Incorporated

The Eagle Rubber Manufacturing Co., Milwaukee, Wis., was recently granted a charter. Authorized capital is 150 shares of no par value. Incorporators are Joseph Leshin, Rena Sattell and Benjamin Sattell.

Office Help in Demand

Improvement in the rubber industry has been noted during the last two months through an increased number of calls for expert office help, according to Merrill D. Wright, president of the Central Vocational Bureau, Akron. For some time the rubber factories have been adding factory workers, but only recently has there been anything like a noticeable demand for the "white collar" worker.

The department of Industrial Relations of Ohio reports that the 30 rubber companies in Summit county spent $72,018,672. for wages in 1923 with a steady improvement in employment conditions from January to June of that year. Rubber, of course, is the leading industry in Akron, the largest city of the country.

Chicago Rubber Formed

The Chicago Heights Rubber Co., 12th and McKinley Sts., Chicago, Ill., was recently incorporated to manufacture and sell rubber tires, inner tubes and accessories. Authorized capital is $200,000. Incorporators are Otto B. Schram, Claude F. Smith and Thomas Marshall.

FOR SALE

TIRE FACTORY

Fully Equipped; Railroad Connections; Good labor conditions

Immediate Possession

K. R. SNYDER

LAFAYETTE IND.

EMBOSSING CALENDERS

For Artificial Leather, Oil Cloth, Carriage and Automobile Covers

DRYING MACHINES

with Copper or tinned iron Cylinders for Cotton Ducks, Drills and Sheetings

The Textile-Finishing Machinery Co.

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PROVIDENCE, R. I.

TWEEDY AND MOWE FORM NATIONAL TIRE AGENCY

O. S. Tweedy and John V. Mowe, both well known in the tire trade, have formed a national tire selling organization to be known as Tweedy-Mowe, Inc. The firm will act as selling agents for several tire manufacturers. Contracts have already been signed with the McKone Tire & Rubber Co., Millersburg, Ohio, under which the new firm becomes its exclusive selling agent.

Mr. Tweedy has been identified with the tire industry since its inception. For ten years he was western sales manager of the old Diamond Rubber Co. and eastern district manager and general branch sales manager of the United States Rubber Co. for another long term. For the past three years he has been vice-president and general manager of the McKone Tire & Rubber Co., which post he will continue to hold.

Mr. Mowe entered the tire business in 1905, was for seven years Detroit manager for the Firestone Tire & Rubber Co., two years with Goodyear as manufacturers' representative, and finally spent eight years with the Kelly-Springfield Tire Co. The last three years, up to June, 1923, he served as a director and vice-president.

Tweedy-Mowe, Inc., will open offices at 250 West 57th St., New York City, and will establish sales representatives at various distributing points.

To Distribute McKone and Other Tires

John V. Mowe

O. S. Tweedy

Both Men Have Long Experience in Tire Merchandising

BALLOON TIRES CAUSE NEW DATING PROBLEMS

The uncertainty that exists among retail tire dealers as to the spring requirements threatens the industry with a problem that must be met just as the manufacturers are beginning to solicit orders on the spring dating basis. It is the opinion of those close to the situation that this fact will have to be taken under careful consideration in the compiling of future tire requirements to allow the dealers to avail themselves of seasonable dating orders.

From its strong opposition to the spring dating practice, which the N.T.D.A. at one time manifested, the association has been persuaded to endorse this plan, the Convention of last November, held in New York City, showing no objection to the dating idea, but asking that extreme care be taken in using it.

The balloon tire factor is one not heretofore considered in the spring dating method. With the multitudinous sizes of balloon tires and the changing standards, it is difficult to forecast the size and quantity that will be required in particular territories. To attempt no dating business would not help the matter. And the placing of large orders by dealers would prove harmful. And until the maker and retailer have a better perspective on market possibilites, the merchant needs to watch carefully the balloons he stocks and the quantities of high pressure or regular tires he needs to supply the market.

CARBON BLACKS

OF HIGHEST QUALITIES

Godfrey L. Cabot,
(INC.)
940 Old South Bldg. — BOSTON
611 Metropolitan Bldg. — AKRON

STOCKS IN

AKRON, BOSTON, CHICAGO, CINCINNATI, CLEVELAND, LOS ANGELES, NEW YORK, PITTSBURGH, SAN FRANCISCO, ST. LOUIS, TRENTON
AND PRINCIPAL FOREIGN CITIES

SOLVENT RECOVERY EQUIPMENT

50 to 90 Per Cent Recovery

SPADONE MACHINE CO., Inc.
15 Park Row New York, N. Y.
Exclusive Selling Agents
BENZINE CONDENSATION CO.

PINE TREE STATE RUBBER HEELS IN GOOD DEMAND

The Pine Tree State Rubber Heel Co., Sabattus, Maine, reports a steady increase in business for the past three months and good prospects for a busy winter. The factory is at present turning out 20,000 pairs of heels a day, of which 80 to 90 per cent are used in the shoe factories of Lewiston and Auburn.

A new mixing mill will shortly be installed which will put six new machines in operation, making a total of 20 machines capable of producing 35,000 pairs of rubber heels a day. When the new machines are installed the number of employees will be increased to 75.

Try Ideal Rubber Promoter

Charges that Orrin L. Brown violated the blue sky laws in an effort to reorganize the old Ideal Tire & Rubber Co., Cleveland, Ohio, were recently brought to trial in Common Pleas Court at Cleveland before Judge Baer. Officials of the Better Business Bureau stated that Brown had obtained $60,000 from stockholders in the rubber company but had later spent only $35,000 on property he was to purchase "in the interest of the stockholders." Brown denies the allegations.

Dunlop Announces New Solid

Dunlop's latest addition to its solid tire line—the Dunlop Special Traction Solid—is now being offered the trade in four sizes, according to an announcement by E. H. Kidder, general sales manager of the Dunlop Tire & Rubber Co., Buffalo, N. Y.

The Special Traction is a tire designed by Dunlop engineers after a great deal of experimenting, to service dump-load trucks, particularly those that are frequently operated in mud, sand and clay. The design of the Special Traction, say Dunlop engineers, greatly lessens the possibility of the development of heel and toe action, or cupping.

Before completing the design of the Special Traction, Dunlop engineers conducted tests in various parts of the country, including the section of Alabama where there is an abundance of soft clay with a consistency almost like that of heavy oil.

These proved, among other things, that "teeth" of some nature would be essential to the design. To that end the engineers

Dunlop Special Traction Solid Tire

built a tire with a tread so constructed as to permit soft substances being released while the tire obtains a firm "grip" on the road. These grooves are to be found on either of the rounded shoulders of the Special Traction.

This last feature—the rounded shoulders—is calculated by Dunlop engineers to permit the tire to withstand severe strain. In other words, the tire rolls naturally on any road, most of which nowadays are of crowned construction.

Issue Rim Statistics

The Tire & Rim Association of America, Inc., Cleveland, Ohio, recently issued statistics of rims approved for high pressure and balloon tires in the various sizes during each month from September, 1923, to August, 1924, inclusive. As these statistics are an excellent index to the relative demand for certain sizes of tires, a table compiled by the association is reproduced below.

TO OPEN RECLAIMING PLANT AT BARBERTON

Hope is expressed that actual work will be started in the new Akron Rubber Reclaiming plant at Barberton before the new year. The building was formerly occupied by the O. C. Barber Concrete Co. and has been idle for several years.

B. O. Etling, Barberton lumber dealer, is president of the new reclaiming company in which the following rubber executives are interested: F. A. and C. W. Seiberling of the Seiberling Rubber company; William F. O'Neil, vice president of the General Tire & Rubber company; G. M. Alderfer, president of the India Tire & Rubber company; and John Christie, superintendent of the Star Rubber company.

Rubber Section Elects

At the annual meeting held in Louisville, Ky., October 1, the Rubber Section of the National Safety Council elected the following officers for the ensuing year:

Chairman of Executive Committee: E. L. Hewitt, U. S. Rubber Co., New Haven Conn.; Vice Chairman and Secretary: H. H. Graef, Goodyear Tire & Rubber Co., Akron, Ohio; Chairman Engineering Committee: E. A. Hoener, The Firestone Tire & Rubber Co., Akron, Ohio; Chairman Safe Practice Committee: W. L. Schneider, The B. F. Goodrich Co., Akron, Ohio; Chairman Bulletin Committee: Reed B. Harkness, Cupples Manufacturing Co., St. Louis, Mo.; Chairman Membership Committee: R. C. Salisbury, Federal Division, The Fisk Rubber Co., Cudahy, Wis.; Chairman Publicity Committee: E. E. Hill, Kelly-Springfield Tire Co., 250 West 57th Street, New York, N. Y.; Chairman Health Hazard Committee: C. F. Horan, Hood Rubber Co., Watertown, Mass.

Reports from various committees showed that splendid work had been done during the past year and if enthusiasm may be taken as a criterion, we may well expect the coming year to be a very successful one. Many of the reports and papers read at this meeting were of such importance to the rubber industry that they will be made the subject of special articles at a later date.

COMPARATIVE RIM PRODUCTION FOR BALLOON AND HIGH PRESSURE TIRES (NOT INCLUDING TRUCK RIMS)

Rim Sizes Used for Balloon Tires

Size	Balloon Rim Size	Aug., 1924		July, 1924		June, 1924		May, 1924		April, 1924		Mar., 1924		Feb., 1924		Jan., 1924		Dec., 1923		Nov., 1923		Oct., 1923		Sept., 1923	
		Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
(27 x 5½)	28 x 5½			210	0.0	150	0.0	488	0.0	382	0.0			289	0.0	456	0.0	101	0.0	10,297	0.6	6,001	0.3	3,048	0.2
(28 x 5½)	31 x 5½	81,931	4.6	107,469	7.1	47,357	3.4	116,997	5.9	204,246	8.4	129,153	4.9	75,910	3.8	17,660	0.7	13,977	0.7	92	0.0				
(29 x 5)	29 x 5	42,943	2.4	63,606	4.0	72,276	5.3	114,557	6.1	81,054	3.4	66,502	2.5	58,970	2.5	13,003	0.6	7,654	0.4	3,958	0.2	2,620	0.1	1,053	0.1
(29 x 5)	31 x 5	76,305	4.3	70,779	5.1	65,654	5.2	104,384	6.5	87,015	3.7	115,910	4.2	45,650	1.9	20,590	0.9			2,136	0.1				
(29 x 5)	33 x 5	47,114	2.7	19,734	0.8	63,594	5.1	62,710	3.3	4,704	0.2	32	0.0	156	0.0	143	0.0					41	0.0		
(30 x 5)	32 x 5	31,169	1.8	14,755	1.1	17,691	1.1	62,654	3.3	66,111	2.7	44,219	1.6	62,616	2.7	20,150	0.9	6,776	0.2	7,583	0.4	6,226	0.3	10,925	0.7
(30 x 5½)	30 x 5½	31,169	1.8	14,755	1.1	17,691	1.1	62,654	3.3	66,111	2.7	44,219	1.6	62,616	2.7	600	0.0	433	0.0			45	0.0		
(30 x 5½)	31 x 5½	15,091	0.9	62,820	4.5	45,911	3.4	65,152	3.5	58,719	2.4	6,222	0.2	756	0.0	722	0.0	25	0.0			43	0.0		
(30 x 5½)	32 x 5½	27,290	1.5	5,956	0.7	47,475	3.4	25,224	1.3	207	0.0	50	0.0	624	0.0	722	0.0	25	0.0			43	0.0		
(30 x 5½)	33 x 5½	27,290	1.5	5,956	0.7	47,475	3.4	25,224	1.3	207	0.0	50	0.0	624	0.0	687	0.0	1,066	0.6	270	0.0	331	0.0	877	0.1
(30 x 6)	30 x 6	29,120	1.6	4,561	0.6	2,315	0.2	4,953	0.3	1,602	0.1	10,450	1.4	4,220	0.2										
(31 x 5)	31 x 5	27,564	1.5	15,672	1.5	12,620	0.9	7,975	0.4	281	0.0														
(32 x 6)	32 x 6	574	0.0	1,066	0.1	1,216	0.1	664	0.0	2,145	0.1														
Total		436,115	23.6	542,172	35.1	556,336	35.8	542,029	29.6	473,968	19.6	372,647	14.2	232,303	9.9	75,041	3.6	29,032	1.2	24,377	1.2	16,511	0.7	14,503	1.1

Rim Sizes Used for High Pressure Tires

Size	Aug., 1924		July, 1924		June, 1924		May, 1924		April, 1924		Mar., 1924		Feb., 1924		Jan., 1924		Dec., 1923		Nov., 1923		Oct., 1923		Sept., 1923	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
20 x 3½*	734,931	44.8	497,452	54.3	429,914	45.5	886,619	47.0	1,081,495	46.7	1,067,574	51.8	633,061	36.5	1,052,463	46.9	582,945	50.3	653,200	47.7	986,035	45.9	793,214	50.1
30 x 3½	168,030	9.5	73,470	6.9	166,615	7.9	141,398	7.6	308,217	13.7	466,378	17.6	480,744	20.5	410,125	17.6	277,899	15.7	327,766	15.7	367,598	15.5	193,396	11.9
32 x 3½	4,510	0.3	3,562	0.3	1,782	0.1	1,417	0.1	11,680	0.5	2,000	0.0	10,002	0.5	6,674	0.3	1,296	0.0	9,974	0.5	21,951	1.1	5,000	0.3
31 x 4*	51,563	2.9			27,563	2.0	33,452	1.8	83,177	3.7	167,677	6.4	216,211	9.4	134,692	5.9	154,939	8.9	97,918	6.8	172,170	8.1	102,170	10.2
32 x 4	1,946	0.1					5,414	0.3	16,980	0.8	570	0.0	6,778	0.2	3,067	0.1	6,016	0.4	1,332	0.0	342	0.0	9,007	0.5
33 x 4	47,526	2.5	45,746	3.1	102,282	7.4	94,418	5.0	143,096	6.9	261,334	7.9	205,209	11.7	266,969	11.3	163,355	9.2	190,785	10.0	270,375	12.7	186,341	11.9
30 x 4	5,311	0.3	6,150	0.4	2,563	0.2	4,569	0.4	7,746	0.3	10,455	1.4	19,291	0.2	17,074	0.7	5,296	0.3	17,644	0.8	16,596	0.8	15,259	1.0
34 x 4	748	0.0			366	0.0			506	0.0							180	0.0	1,087	0.0	3,774	0.1	576	0.0
29 x 4½	35,165	2.0	14,736	1.1	17,691	1.3	62,654	3.3	66,111	2.5	267	0.0												
31 x 4½	27,290	1.5	5,956	0.7	47,475	3.4	25,224	1.3	207	0.0														
32 x 4½	66,120	3.6	77,972	5.9	70,096	5.7	113,516	6.1	117,155	5.0	160,658	6.2	149,216	6.1	225,787	9.9	72,979	4.1	127,980	7.1	154,005	6.9	94,320	6.0
33 x 4½	570	0.0									950	0.0	1,900	0.1					520	0.0				
34 x 4½	1,400	0.1	7,833	0.6	5,770	0.4	16,162	0.8	29,544	1.2	36,993	1.4	29,630	1.3	46,112	1.9	32,904	1.8	20,144	1.1	17,715	0.9	24,129	2.2
35 x 4½	240	0.0	1,077	0.1									168	0.0	693	0.0	300	0.0	1,082	0.0	870	0.0	1,347	0.1
Total	1,281,156	72.1	937,671	73.3	1,021,836	73.9	1,374,749	73.6	1,856,040	77.6	2,141,168	83.2	1,991,022	80.1	2,196,454	65.9	1,606,181	90.7	1,654,227	91.2	1,818,339	91.6	1,491,492	94.4

* Clincher

INVITE MANUFACTURERS' EXHIBITS AT LEIPZIG

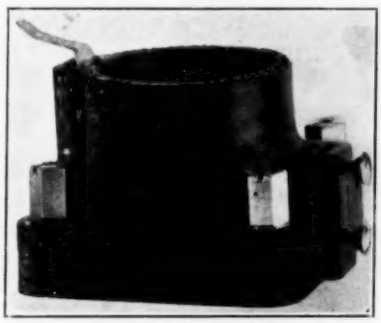
Efforts of the American Chamber of Commerce in Germany, with offices in Berlin, to pave the way for exhibition of American products at the Leipzig Fair have achieved some measure of success. Beginning with the Spring Fair, from March 1 to 11, 1925, an exhibition hall of more than 5,000 square feet will be reserved solely for exhibits of American manufacturers. This first showing will be the nucleus of an exhibition building to be devoted solely to American exhibits.

The entire system of the Leipzig Fair will comprise two distinct groups of exhibitors, namely the general trade group and the technical group. It is in the latter group that the rubber industry will be represented.

GOODRICH ANNOUNCES A NEW RADIO TUBE SOCKET

The B. F. Goodrich Rubber Co., Akron, Ohio, recently placed on the market a new vacuum tube socket in which the tube may be either inserted and fastened or unfastened and removed without turning or twisting. The hard rubber composition from which the new sockets are made has the advantage of low dielectric loss, which feature makes the socket particularly valuable in circuits employing radio frequency.

As may be seen from the photograph, an exclusive Goodrich spring locks the tube automatically when inserted and to release the tube it is only necessary to touch the spring lock. "Wiping" type contacts are automatically cleaned when the tube is inserted. The terminal nuts are slotted so that a screw driver as well as pliers may be used to tighten them. The new vacuum tube socket is furnished complete with nickeled fittings.



Goodrich V. T. Socket

To Redeem Kelly Notes

It was recently announced a number of Kelly-Springfield 10 year 8% sinking fund gold notes had been designated by lot for redemption on November 15 next at the office of the Central Union Trust Co. of New York, 80 Broadway, New York City. The notes selected for redemption include denominations of $1000, $500 and $100.

DUNLOP'S SUMMER EXPORTS TOTALED 23,000 CASINGS

Since early summer foreign shipments of the Dunlop Tire & Rubber Co., Buffalo, N. Y., have run considerably more than 23,000 casings, according to an announcement by E. H. Kidder, general sales manager. This amount includes both balloon and high pressure types as well as solids. The number of tubes shipped is approximately the same as the amount of pneumatics.

Of the many points reached, Bombay, India has been the farthest away. Included among the foreign ports to which these 23,000 Dunlops have been shipped, are the following: Cape Town, South Africa; Rio de Janeiro, Brazil; Uruguay, South America; Stockholm, Sweden; Santos, Brazil; Buenos Aires, Argentine; Valparaiso, Chile; Christiania, Norway; Bombay, India; Rio Brance, Brazil; Mexico City, Mexico; Durban, South Africa; Johannesburg, South Africa; Copenhagen, Denmark; Havana, Cuba; Lima, Peru; Amsterdam, Holland; Accra, Gold Coast, Africa; Georgetown, British Guiana, and Punta Arenas, Chile.

"This foreign business," states Mr. Kidder, is gratifying because it points—and very decidedly—to the constantly increasing world-wide acceptance of Buffalo Dunlop. And there is particular gratification in the realization that American craftsmanship is becoming an important economic factor abroad."

CABARRUS COTTON MILLS

M. L. CANNON
PRESIDENT & TREASURER

KANNAPOLIS, N. C.

Superior Quality Tire Fabrics

EGYPTIAN-PEELER
KARDED & COMBED
CORD & SQUARE WOVEN

CANNON MILLS, Inc.
Selling Agents

NEW YORK
55 Worth St.

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327 S. La Salle St.

A. W. REID
Representative

PERSONALS

Activities of progressive men in the rubber industry

Two officials of the Firestone Tire & Rubber Co. have been honored with high offices in the new Tadmor Temple recently dedicated in Akron by Shriners from all Ohio. They are Robert E. Lee, illustrious potentate, and Homer Campbell, illustrious high priest.

* * *

P. W. Litchfield, vice president of the Goodyear Tire & Rubber Co., has been named chairman of a citizens committee to work for an air-mail landing field for Akron by Mayor D. C. Rybolt. Other rubber company officials appointed to the committee were C. B. Raymond, vice president of the B. F. Goodrich Co.; John W. Thomas, vice president of the Firestone Tire & Rubber Co.; and W. C. Young, Goodyear aeronautical expert.

* * *

Horace Miller, export department of the Firestone Tire & Rubber Co., returned to Akron in September after an absence of two years, having completely circuited the globe.

* * *

Karl Young, a Firestone tire builder, has won much praise because of his ability as an oil painter. His "American Princess" recently won honors in an exhibition of painting by alumni of the art department of West Virginia Wesleyan college.

Richard W. Brouse, formerly general sales manager of the American Rubber & Tire Co. and for many years district manager for the B. F. Goodrich Co., has been appointed Akron dealer for the Pierce Arrow automobile.

* * *

Dr. C. E. Smith, who organized and has been in charge of the dental clinic at the B. F. Goodrich factory in Akron for twelve years, has resigned to establish a private practice in Akron.

* * *

R. M. Sanderson, formerly with Goodrich and later with the Miller Rubber Co. as superintendent of the calender and mill rooms, is now manager of the Akron branch store of the India Tire & Rubber Co.

Maurice Switzer, vice president of the Kelly-Springfield Tire Co., who has been in Europe for several weeks, is expected to return about November 1.

* * *

H. W. Slauson recently resigned as engineering service manager of the Kelly-Springfield Tire Co., Cumberland, Md., to open an office in the Fisk Building, 250 West 57 St., as a consulting automotive engineer. He will continue a connection with the Kelly-Springfield Co. in a consulting capacity.

* * *

W. B. Brewer, superintendent of the Giant Tire & Rubber Co., Findlay, Ohio, recently celebrated his seventh anniversary with that company by passing out candy and cigars to more than 300 employees.

* * *

Edward G. Wilmer, chairman of the Goodyear Tire & Rubber Co., is a director of the new American & Continental Corp., which was organized in connection with the $110,000,000 German bond issue. The purpose of the new corporation, which has an initial subscribed capital of $10,000,000. and an authorized capital exceeding $25,000,000, is to make American capital available for the financing of industrial enterprises in Europe.

O. L. Weaver

O. L. Weaver, familiarly remembered as "Buck," died September 7 in Akron. He had just returned from California, whither he went four months ago in vain effort to regain his failing health. His death was due to heart trouble and a complication of diseases.

Mr. Weaver was well known in both automotive and tire circles from his twenty-odd years' associations in those industries. From 1898 to 1910 he was with Goodyear, serving as branch manager at Cincinnati and New York. Afterward, he was distributor for Chalmers and Pierce-Arrow cars in Cleveland.

More recently, Mr. Weaver became secretary of the Star Rubber Company, Inc., Akron, Ohio. In that capacity he made many friends as he traveled widely on important missions all over the country.

Mr. Weaver leaves a widow and one son in Cleveland. He was 47 years of age. His passing is mourned by a host of friends in all parts of the United States.

Joseph Dangel

Joseph Dangel, up until 1920 superintendent of the Akron factory of the American Hard Rubber Co., former Akron councilman and one of the best known men in the rubber city, died recently at his home, 738 Coburn St., Akron, Ohio.

Mr. Dangel was 63 years old and had been superintendent of the American Hard Rubber factory for nearly 15 years before he resigned because of ill health. He started work with the American company in 1887, when it was a part of the property owned by the Goodyear Tire & Rubber Co.

He is survived by his widow, Amelia, and one daughter, Miss Lena Dangel.

Appraise McLean Factory

The property of the McLean Tire & Rubber Co., East Liverpool, Ohio, was recently appraised at $117,745 in the case of the Continental Trust Co. of Pittsburgh, Pa., against the company. The appraisers were James S. Hilbert, R. L. Cawood and C. W. Hendershot. Permission was granted to the Erie City Iron Works to remove a boiler and fittings from the factory. A similar court order was issued on behalf of W. B. Davis.

Firestone Pays Dividends

J. J. Shea, treasurer of the Firestone Tire & Rubber Co., Akron, Ohio, recently announced that the regular quarterly dividend of 1½% on the 6% preferred stock of the company had been declared, payable October 15 to stockholders of record October 1. A dividend of $1.00 per share on the common stock was also declared, payable October 20 to stockholders of record October 10.

To Make Rubber Stamps

The R. Woodman Manufacturing & Supply Co., Boston, Mass., was recently incorporated with an authorized capital of $50,000 and 1000 shares of no par value. The company will manufacture rubber stamps and similar articles. Incorporators are Ernest E. Purbeck, Medford; Dudley B. Purbeck, Boston; and William W. Hastings, Malden.

C. C. Case Leaves U. S.

After many years spent in the service of the United States Rubber Co., Charles C. Case, general manager of mechanical goods sales, recently tendered his resignation to become effective at once.

Mr. Case is succeeded by Walter Gussenhoven, who has been his assistant. Mr. Gussenhoven started with the United States company almost 25 years ago in a humble capacity.

Quits Kelly-Springfield

W. H. Bell, assistant general sales manager of the Kelly-Springfield Tire Co., has resigned. As yet he has announced no definite plans, but he will remain in New York for the time being, with headquarters at the Lotos Club. He has been with Kelly-Springfield for many years, first as a branch manager and later as a member of the general sales department.

May Lose Bail

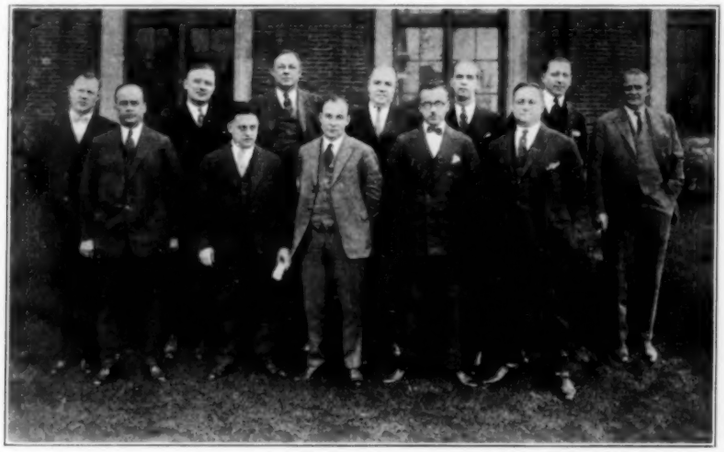
Whether the bail of Robert Lyons, former president of the Jefferson Rubber Co., Jefferson, Wis., is to be forfeited as ordered by Justice C. A. Buss recently, is to be determined by Judge George Grimm. Upon the request of Lyons' attorney Judge Grimm granted a writ of certiorari, compelling Justice Buss to turn over to the Circuit Court all records in the case in which Lyons is charged with violation of the blue sky laws.

Justice Buss recently ordered the $3,000 bail of Lyons forfeited because he did not appear personally at the preliminary hearing. Scores of farmers lost their savings through investing in the Jefferson Rubber Co., it is charged by the state.

DUNLOP TIRE & RUBBER CO. TO OPEN THREE NEW DISTRIBUTING WAREHOUSES

Decision to Establish Stock Points at Richmond, Omaha and Oklahoma City made at Divisional Sales Managers Conference -- Launch Spring Sales Contest

To give better service to Dunlop merchants in the territories surrounding Richmond, Va.; Omaha, Nebr.; and Oklahoma City, Okla. distributing warehouses shortly will be established in those cities. This decision was one made during a conference of divisional sales managers of the Dunlop Tire & Rubber Co., Buffalo, N. Y., who met in the Buffalo Athletic Club, Oct. 3 and 4.



Executives of the Dunlop Tire & Rubber Co. at the Sales Managers' Conference

These additional stock points will give Dunlop 21 distributing outlets which include: Atlanta division, 557 Whitehall St.; Buffalo division, River Road; Cleveland division, 2017 East 65th St.; Chicago division, 3711 S. Ashland Ave.; Dallas division, 1710 Carter St.; Milwaukee division, 1053 Cramer St.; Kansas City division, Coca Cola Bldg.; San Francisco division, 274 Brennan St.; Philadelphia division, 32nd & Oxford Sts.; Boston division, 200 Brookline Ave.; New York City division, 537 W. 35th St.; St. Louis Warehouse, 321 Sarah Ave.; Detroit warehouse, 106 N. Campbell Ave.; Pittsburgh warehouse, 39 South Side Terminal warehouse; Cincinnati warehouse, 128 E. 9th St.; Portland warehouse, Westbrook, Me.; Seattle, Dunlop Fox Tire Co., 925 Pike St.; Indianapolis, Andrew Trieb Tire Co., 541 N. Capitol Ave.

The conference, according to E. H. Kidder, general sales manager of the Dunlop company, was called primarily to discuss Dunlop's spring dating plans, and the business outlook for the coming year. Mr. Kidder's address had to do with the planned sales efforts for the coming Dunlop year, which starts Nov. 1, as well as the more immediate activities which the spring dating campaign entails. President E. B. Germain discussed general policy questions and complimented the sales force on its very material progress during the last twelve months.

During the conference a Dunlop Spring Expectation Schedule drive was launched in the form of a 'Round the World Flight. This is patterned after the victorious flight of the U. S. Army aviators that recently circled the globe. Each of Dunlop's divisions will be designated as a plane. Distance will be tabulated from the business obtained.

Those in Attendance

It is an interesting fact, according to Mr. Kidder, that with very few exceptions, each of the stops on the flight, 60 in number is a Dunlop distributing point, reemphasizing to the sales heads and field men, the world-wideness of Dunlop.

Attending the conference, beside Mr. Kidder were: E. B. Germain, president Dunlop Tire & Rubber Co.; G. O. MacConachie, advertising manager; Roger E. Allen, E. A. Stephens, Walter H. Michael, assistants to the general sales manager; Howard B. Armstrong, manager truck tire sales; L. W. Kennedy, manager Atlanta division; W. A. Golden, manager Buffalo division; T. W. Decker, Jr., manager Cleveland division; C. E. Neumann, manager Minneapolis division; J. C. Given, manager Philadelphia division; E. T. Richardson, manager Boston division; L. F. Desmond, manager Chicago division; R. L. Marshall, manager Dallas Division; A. L. Wendover, manager New York City division; L. A. Lutz, manager San Francisco division; C. P. Stearns, manager Kansas City division. T. W. Niblett, sales manager of Dunlop's golf ball dept. and J. P. Killoran, represented this division.

Form Tire Company

The Eriksen & Elze Tire Co., Inc., Brooklyn, N. Y. City, has been granted a charter. Authorized capital is $25,000 in $100 shares. Magnus Eriksen, 3101 Avenue J, Brooklyn, A. P. Elze, Woodhaven, N. Y., and Lillian E. Eriksen, 3101 Avenue J, Brooklyn, are directors and subscribers. Gollman & Smith, Brooklyn, are attorneys for the new company.

Perfect Beads

Entire freedom from bead trouble in the construction of straight side tires is assured by the use of either National "(Patent)" High Tensile Strength, Flat Woven, Bead Braid or our new (Pratt Patent) Bead Cables. These cables, made to dimensions specified, have seven strands, yet only one piece of wire is used without soldered, welded or brazed joint.

Write for working samples of either National flat braid or Pratt cables (no charge to tire manufacturers) and full information as to our products and service.

Our engineering department tests beads and furnishes complete confidential reports as to their stretch, set and bursting point, without charge. Inquiries solicited regarding this special service.

National Standard Company
Niles, Michigan

Est. 1900 Inc. 1919

THE KUHLKE MACHINE CO.

Formerly Jones & Kuhlke

AUTOMOBILE TIRE MOLDS and CORES

GENERAL MACHINE WORK

Akron, Ohio

FACTORY EQUIPMENT

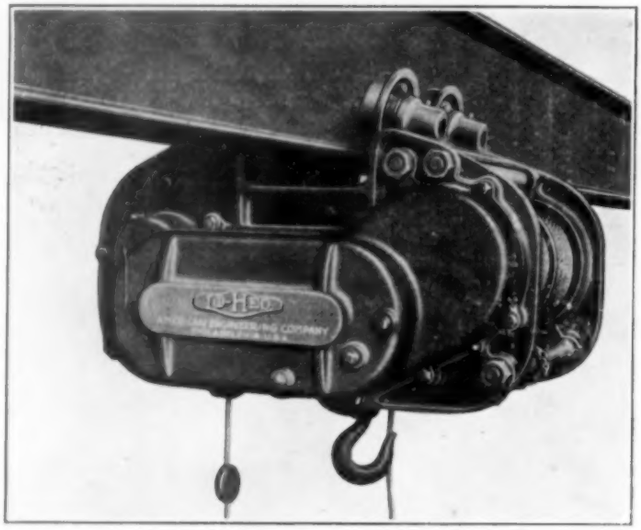
A New Electric Hoist

A new electric monorail hoist designed to operate in a minimum headroom is announced by the American Engineering Co., Philadelphia, in half-ton and one-ton sizes. This hoist retains many of the features of the other "Lo-Hed" hoists made by the same company, but is smaller and is intended for general utility use where a light, handy hoist is needed.

Like all the "Lo-Hed" line, this hoist is able to draw the load hook up until it almost touches the rail. This makes it available in places where low headroom prevents the use of any other hoist. It gives additional clearance and safety in handling bulky loads and makes it possible to pile materials higher than can be done by any other means, thus increasing the storage capacity of warehouses.

Automatic holding and lowering brakes are provided and a safety device checks the hoist and throws off the current at the upper limit of travel. Roller bearings and automatic lubrication give an efficiency of eighty per cent. A factor of safety of at least five permits overloads in emergency.

These hoists are furnished for either direct or alternating current. All working parts are easily accessible and the motor can be removed for repairs in a few minutes without disturbing the load on the hook.



"Lo-Hed" Hoist, Showing Gears, Casing and Drum

COMPLETE A SURVEY OF THE RETAIL TIRE TRADE

The efforts of the Rubber Association of America, the National Tire Dealers Association and the Harvard Bureau of Business Research to determine the cost of doing business in the retail tire and accessory trade have resulted in the issuance of a bulletin giving the results obtained over a period of one year.

Fifty statements were secured by the field agents of the Bureau and although definite conclusions can only be drawn from the comparison of several years' facts and figures, the preliminary results were considered representative. 4,489 firms were asked to submit financial statements and 236 complied with the request. The total net sales volume of the firms were $18,824,000. Twenty-five per cent of the statements submitted were not suitable for comparison. Thirty-four states were included in the compilation, 75 firms operating in cities of less than 100,000 population, 35 in cities between 100,000 and 399,000, 55 cities of 400,000 to 799,000 and 46 in cities of 800,000.

The report further shows that retailers of tires in the larger cities, who handled accessories and conducted repair departments, had a more profitable year than those in the smaller towns whose merchandise consisted of the major items of this industry.

Aetna Rubber Breaks Ground

Developments have begun on the $25,000 building program of the Aetna Rubber Co., Ashtabula, Ohio. Ground was broken for the concrete foundation of the new addition and work has been started on the power house. The work will be completed within 60 days.

The addition will be a two story modern brick building, 25 ft. wide and 167 ft. in length. The lower floor will be used as a press room, and the upper floor as a storage and material department. The building will be constructed entirely of brick.

The new power house is to be 40 by 50 feet in dimensions and moderately constructed of fire proof brick. This building will house three new boilers, and is to be used also as a pump house.

C. J. Dunne, manager of the Aetna Rubber Co., states that this building program is essential to accommodate the growing needs of the industry. More men are being employed daily, but no estimate can be made concerning the number of men that will be employed for the new addition.

Fuze-On Rubber Co. Formed

A certificate of incorporation was recently filed at the office of the attorney general in Augusta, Maine, for the Fuze-On Rubber Co. The company was organized at Bath to manufacture a product for patching inner tubes and other rubber articles. A small plant is now being operated at 8 North St., Bath, Maine.

The Fuze-On process consists in cleaning the tube with a cleaning compound, scraping this off, and then applying a drop or two of the welding compound which is worked into the surface with a knife blade. The process produces a semi-cured surface and a strong "weld."

Authorized capital is $10,000 in $50 par value common shares. Incorporators and officers are Raymond J. Belyea, president; Williams Whitney, treasurer; Alice H. Whitney and Elizabeth E. Belyea.

COMPANY ORGANIZED TO REOPEN FACTORY

Incorporation of the Defiance Rubber Co., Defiance, Ohio, to reopen the factory of the Central Rubber Reclaiming Co. which was destroyed by fire a year ago, was authorized Tuesday by the secretary of state with a capitalization of $25,000.

Incorporators are G. Scheets, L. Kirsch, M. R. Higgins, G. Van Vlear and Stanley Robers. Charles L. Kintner, manager of the former concern, has returned and the rehabilitated plant is in operation again.

To do Rubber Research Work

The United Oil & Natural Gas Products Corp., 30 Church St., New York City, recently completed the construction of a new laboratory building at its factory in Cargas, La. The company, which is one of the largest producers of carbon black in the world, is equipping the laboratory with apparatus for the analysis and testing of this commodity.

The laboratory will be divided into chemical and physical divisions. The physical laboratory will be equipped with complete rubber laboratory machinery. The future plans of the company call for special research work to improve carbon black for use in the manufacture of rubber products.

REORGANIZED COAST TIRE & RUBBER SHOWS A PROFIT IN THREE MONTHS

Pays First Dividend in its History — Operation of Factory from May 22 to August 30 Showed Profit of $13,321 — To Issue Temporary Stock

Coast Tire & Rubber Co., Oakland, Calif., has been taken out of the hands of a receiver, a plan of reorganization effected and the company for three months has been in operation on a limited schedule of production under the title of The Coast Tire & Rubber Co. The word "The" prefixed to the name of the original company forms the name of the new concern.

Declare a Dividend

The first dividend in the history of the company was declared Sept. 30, this dividend was made possible by new capital, it was pointed out. The operation of the factory has shown a profit of $13,321.95 over factory cost from May 22 to Aug. 30, 1924. The September operations have not been completed and, therefore, are not included. It is predicted that the December interest payments will be larger.

The officers of the new company are: J. C. Hughes, Oakland, president; Louis S. Budo, Fresno, vice-president; E. H. Russell, Oakland, secretary and treasurer. The directors are J. C. Hughes, Louis S. Budo, F. E. Miller, J. A. Silveira and O. B. Caldwell. The factory manager is M. B. Reynolds for many years factory manager with the Fisk Rubber Co. and the Hood Rubber Co.

New Company Left with Large Debt

Following the reorganization, the new company was left with an impaired credit and with a debt of $168,746.76. A plan was put on foot to raise $300,000.00 by means of a bond issue. At the stockholders meeting held June 26 there were not sufficient shares represented to authorize issuance of the bonds.

Because of these conditions, the Commissioner of Corporations permitted the formation of a new corporation for the purpose of acquiring a large portion of the property of the old company and of continuing the business for the benefit of the stockholders. The new corporation has acquired the buildings, machinery and equipment of the old corporation and has assumed the debt mentioned above.

Under authority given by the Commissioner of Corporations an appraisal was made of the properties of the old company by the California Appraisal Co. The value upon a cash basis was found to be $530,274.27 After deducting the indebtedness of $168,746.27, the net cash value of the equity in the property was found to be $361,530.00.

The new corporation, The Coast Tire & Rubber Co., paid into the treasury of the old corporation in payment for the plant 36,153 shares of its new second preferred stock at the price of $10.00 per share, together with 36,153 shares of its new no par value common stock. This new stock will be distributed among the preferred stockholders of the old company in proportion to their holdings.

Working Capital Needed

Instead of mortgaging the property, a plan is being put into effect whereby stockholders of the old company may loan to the new organization funds sufficient to pay that debt and to supply working capital in order that the company may go into production of tires and tubes in large enough volume to supply the demand which has been created for them.

The money so loaned will be secured not by a mortgage, but by the issuance of 7 per cent cumulative first preferred stock. This stock is not a permanent investment, but is to be recalled and retired upon payment to the stockholders of $10.00 per share out of a sinking fund to be established each year of 10 per cent of the gross earnings of the factory.

GIANT TIRE REPORTS EXCELLENT BUSINESS

C. E. Hart, president of the Giant Tire & Rubber Co., Findlay, Ohio, recently announced that prospects for the last quarter are excellent. Sales thus far this year have totaled more than $1,000,000, due largely to the favor that the Giant balloon clincher tire has met with.

New production records were established when the plant produced 1,002 tires and 2,000 tubes in a 24-hour period. Current output is the largest in the history of the Giant company and is a goal that the company has been attempting to reach for some time.

Hammond Starts Production

The Hammond Rubber Co., with offices and factory in the Justus Bldg., Massillon, Ohio, which was organized last June recently began production. The first dip consisted of 1,600 toy balloons. These will be shipped to dealers as samples. Tests made with specimens from this lot showed that they were capable of holding gas for 24 hours whereas the capacity of the average toy balloon is from 12 to 14 hours.

Although the capacity of the present equipment at the factory is 350 gross a day, the size of the present quarters will make it necessary to limit production to 100 gross.

S. W. Hammond, president and general manager, considers his own formula for transparent balloons better than that now in general use. In a test a pressure of 25 pounds was required to tear the rubber.

Toy balloons will be the principal article of manufacture this winter but later other rubber novelties may be added to the line.

To Sell Rubber Footwear

Edward W. Sauer, 166 Ridgewood Ave., Newark, N. J.; Robert A. and George S. Sauer, 508 Jefferson Ave., Elizabeth, N. J., have filed articles of incorporation for Edward W. Sauer, Inc., 109 Broad St., Elizabeth, N. J. Authorized capital is $100,000. The firm will engage in the retailing of rubber and leather footwear.

When you feel the need of buying or selling rubber equipment, are looking for competent help or seeking a responsible position, the classified column of THE RUBBER AGE, the only "twice-a-month" rubber publication will prove advantageous. It covers the field first.

THE VULCANIZED RUBBER CO.

Manufacturers of

HARD RUBBER GOODS

of Every Description

251 FOURTH AVENUE
New York

The Use of Fillers in Compounding Rubber

Effects on Physical Properties of Finished Products Asbestine in Combination with Crude Rubber and Latex

By Ismar Ginsberg

ONE of the most important steps in rubber processes is the compounding of crude rubber with various ingredients which are intended to effect changes, both physical and chemical, in the character of this substance. Some materials are added to change the chemical character of the rubber molecule by bringing about the vulcanization of the rubber, others are employed to aid in this chemical change, still others are used to color the rubber and finally a large class of substances are incorporated with the rubber batch to produce physical changes in the finished vulcanized product as well as to reduce its cost. The reasons for using this last-named class of substances, which are also known as fillers, loading or weighting materials, are really but two in number, viz., to reduce the cost of the finished article without injuring the advantageous properties of the gum, and to impart to the rubber mixture the good qualities of the filling material.

Materials that are used as fillers must be differentiated from those that are employed as diluents. Diluents are merely substances which are employed in cheapening the rubber mixture. Factice, regenerated rubber, mineral rubber, may be considered as diluents. At the same time they soften the rubber and render its processing easier. Certain mineral substances are also merely diluents, that is they cheapen the product without improving its quality in any marked manner.

Fillers Improve Quality of Product

But in the true sense of the word, a filler is not a substance that merely reduces the cost of the rubber article. It is something that when added to the rubber mass will improve its physical properties, and hence its use is fraught with considerable advantage not only to the rubber maker but to the user of the rubber merchandise as well. The true function of a filler is to give to the finished vulcanized article definite physical properties, such as toughness, elasticity, durability, resistance to abrasion, to oxidation, to the effects of acids and alkalies, vapors and liquids with which the product may come in contact. The action of the different substances that are employed as fillers varies considerably and each filler must in reality be considered by itself in a close study of this subject.

Fillers are mainly substances of mineral origin. Certain organic materials of vegetable or animal origin are also classed as fillers by some authorities, although their action is more in the nature of facilitating the manufacturing process than of giving definite advantageous properties to the finished vulcanized product.

Effect of Fillers on Tensile Strength

Up to within recent years the use of fillers in compounding rubber has been more or less empirical. Each rubber mill selected the filler it thought best under the circumstances and determined how much of it could be used with impunity. The natural impulse was to use as much as possible and still obtain a product that would stand up against the service which was required of it. What happened when the filler was added or how the results were obtained was thought to be of minor significance, although it might have been realized that unless it were known just what the action of the filler was, it could not be hoped that the best results could be obtained with its use. It was appreciated that fillers should not be crystalline in nature, for then the sharp edges of the crystals would cut into the rubber and destroy it rather quickly. But the size of the particles of the loading materials was not bothered with to any great extent, nor was it seen that there was any real advantage to be gained from a filler constituted of one size of particle than from another. In other words the use of fillers by rubber makers was based purely on guess work. Correct usage of course being gained from long practical experience and hence productive of good results but not of the best possible results.

Analogy Between Fillers and Pigments

It was first seen that there must be some advantage in having the filler particles of certain dimensions by studying the effects that were obtained when pigments of different degrees of fineness were employed in coloring the rubber mixture. It was known early in the science that pigments of a high degree of fineness possessed higher coloring power per unit weight than those which were coarser. Another consideration which made it advisable to select and use coloring matters of fine state of sub-division was that when too coarse materials were employed, the displacement of the same in the finished rubber article, if for example it was an inner tube, gave rise to the possibility of air leaks. It was thus in a gradual manner that the rubber manufacturer came to regard the fineness of the filler that he added to the rubber batch of paramount importance in determining the properties of the finished rubber article.

But only within recent years has the real significance of this matter been evident. It may be stated without equivocation that under ordinary circumstances and as a general rule, the finer the particles of the filler that is added to the rubber batch, the greater the toughness and the tensile strength of the rubber article that is manufactured from it. One development which showed in a very conclusive manner the correctness of this statement was the use of clay which has been obtained in an extremely fine state of sub-division by deflocculation in compounding the rubber batch.

Many experiments have been made to determine the exact effect of the addition of fillers to the rubber batch, of which perhaps the most noteworthy are those originally described by Wiegand. The basic mixture that he used contained rubber one hundred parts, litharge thirty parts, sulphur five parts. To this, various proportions of the fillers were added and curves were drawn to show the strength of the finished product in its relationship to the proportion of filler used.

A considerable variety of substances were used, both fillers and pigments. The results were very conclusive and showed that while not every substance that is added to the rubber batch gives desirable results, a definite conclusion could be drawn to the effect that those materials which did not produce good effects on the rubber were substances whose particles were particularly coarse.

Use of Asbestine as a Filler

As has been mentioned, a great many substances are used as fillers, and the most important of these will receive a short discussion in this article. The first substance that demands attention is the mineral asbestine, which does not enjoy so wide a use as a rubber filler as some of the others, but which is a very interesting substance because of the fine results that it gives when used in conjunction with rubber latex whereby rubber articles are made directly from the rubber latex.

Asbestine is a snow white substance which is obtained from the natural mineral by purification. The composition of the mineral is as follows:

Silica	48.91 per cent
Alumina	2.19 per cent
Iron oxide	2.80 per cent
Magnesia	27.96 per cent
Lime	13.21 per cent
Water	3.91 per cent
Manganous oxide	trace
Total	99.88 per cent

Asbestine is accordingly a magnesium silicate for the most part. There are three magnesium silicates that are used in compounding rubber, talc, asbestos and asbestine. Asbestine is composed of short, soft, pliable, elastic, silky-lustrous needles or fibers with a fatty feel and stands midway between the unctuous talc and the silky lustrous asbestos.

It must be remembered that a filler in order to give good results must possess colloidal chemical properties. Fillers are inert but they should be able to combine or form proper mixtures with the rubber colloid. Talc possesses this property, but asbestos does not and asbestine combines in it the good properties both of talc and asbestos and is a substance which, though not used up to the present time in any great quantities, is eminently suited, according to some rubber chemists of note, as a rubber filler.

It is also known that asbestine will vary in properties according to where it is mined. Thus some forms are almost pure silicate of magnesia, but then again other grades of the mineral contain quantities of silicate of lime in addition to the silicate of magnesia. It is however claimed that the admixture of the latter silicate in the mineral is not detrimental to its use as a filler, for silicate of magnesia does not have any chemical action on the rubber, and the physical properties of the two kinds of asbestine are identical.

Asbestine with Crude Rubber and with Latex

The German chemist Ditmar has made a rather thorough investigation of the use of asbestine as a filler in admixture with crude rubber and also in the newly developed technology of making rubber articles direct from rubber latex. It is claimed that asbestine will produce a matting of the rubber composition, a condition which cannot be obtained with talc.

It is important here to digress a little on the subject of the internal matting or thorough combination between the filler and the rubber. It is evident that this is desirable and it is known that the different fillers that are used in compounding the rubber batch possess this property in different degrees. Thus zinc oxide is a filler which is claimed by some authorities to be less effective in matting or felting power than magnesia, alum, etc. The weight of the filler does not seem to have any particular relation with its felting power.

Asbestine is about as heavy as chalk but its felting power is much greater. In the mixing operation, in which rubber compounded with asbestine is employed, the well-known destructive effect of the mixing on the internal structure of the rubber is counteracted by the felting or matting power of this mineral substance. The rubber is held together in a homogeneous mass and the strength of the finished article is just as great as if the injurious effects of the mixing operation had never taken place.

It is claimed that asbestine is particularly well suited for making such rubber merchandise as rubber soles, rubber heels, tennis shoes, packing rings, rubber erasers, valve packings. Good results are obtained by mixing the asbestine with half its weight of zinc oxide or heavy spar.

Colloidal Properties of Fillers

It has been mentioned that the fineness of fillers determines to a large degree their usefulness as loading materials. It must also be remembered that when the rubber mass is being mixed between the mixing rolls, it is really being liquefied in a certain sense. The rubber is brought to such a condition that it can easily absorb colloidal materials and hence if the filler itself possesses colloidal properties or is employed in a state of sub-division approaching colloidal fineness, the combination between it and the rubber will be more perfect, the mixture obtained will be homogeneous and the quality of the finished rubber merchandise will be better than when coarser fillers are employed.

In modern tire technology one of the results that are specially worked for is the reduction of internal friction in the body of the tire. It is for this reason that in building up cord tires threads twisted in the form of a cord and laid in parallel strands are employed. The action of asbestine as a rubber filler is claimed to be similar to the cord threads. The colloidal condition of the asbestine allows it to be absorbed by the rubber in the mixing process. In all its uses for making different kinds of rubber merchandise it must be remembered that its chemical resisting powers can also be taken advantage of and it may accordingly be employed with good results in the manufacture of acid tubes, storage battery boxes, and the like.

Because of the colloidal properties which asbestine exhibits and which resembles those of a colloidal magnesium silicate, the product can be very advantageously employed in conjunction with rubber latex. The two colloidal substances readily mix with one another. Furthermore the combination between the asbestine and the rubber colloid is much more thorough and easy to accomplish than the mixing of the crude rubber mass with the mineral. This is not strange for the rubber in the latex state is better able to absorb the particles of asbestine because of the greater ease of mixing a liquid with a solid than one solid with another. The result is that when the rubber latex, mixed with asbestine, is coagulated, a soft, elastic combination is obtained.

What has been said about asbestine applies as well to any other rubber filler that possesses colloidal properties. While the filler must be without any chemical effect on the rubber molecule, it cannot be said that the filler should be absolutely inert, in the strict meaning of that word. There must be some affinity between the filler and the rubber, but this affinity must be of a physical rather than a chemical nature. The results that are obtained with different kinds of fillers and even with the same filler in different physical conditions readily demonstrates the correctness of such a theory. The mixing of the rubber with the filler is considerably accelerated when there is a decided tendency for the two to enter into a physical combination. This is well demonstrated in the case of asbestine. What forms is another question. It has been suggested that an adsorption compound ensues between the two substances. One German writer aptly enough characterizes the action that takes place as a "swallowing" of the rubber latex by the filler.

Results in Use of Asbestine with Latex

It will be interesting to give the claims that are made for rubber latex-asbestine merchandise as contained in Ditmar's article on the subject. It is said that the mixture may be used in the manufacture of rubber latex paper and latex linoleum not with the idea of reducing the cost of manufacture of these products, which is the natural result of course when the cheap product, asbestine, is employed, as for the purpose of improving the quality of the product. A very strong waterproofed paper is obtained.

This brings up another phase of the rubber paper controversy, namely, what real effect has the addition of the asbestine on the finished product. There has been so much said on both sides of this question, that it really is foolhardy to start another discussion on it, but it might be possible that the addition of the asbestine to the rubber latex might have a favorable effect on the paper made from the rubber latex-asbestine mixture. The paper field is a large one and if rubber finds a real outlet therein, it will be to the advantage of the entire rubber industry. The problem may be solved in this manner. At any rate it appears to be worth a try.

Products Made from Asbestine-Latex

Ditmar also claims to have secured very good results with asbestine-rubber latex in the manufacture of stuffing box rings, packings of all sorts, and the like. One saving that is effected in making these products is the reduced cost of the asbestos ingredient. The more expensive long fibered asbestos can be replaced by the cheaper short fibered variety.

Seamless foot pads is also a product that has been made with asbestine-latex. These are called "latex foot pads." In the regular process of making this product colloidal materials such as colloidal cement, colloidal gypsum, colloidal coloring materials and the finest grade of pulverized wood flour or sawdust were employed. These substances were mixed with rubber latex as well as the proportionate amount of colloidal sulphur and vulcanized. Good results are obtained in this way, but it is claimed that when asbestine is added to the mixture in a rather large proportion a firmer bond between the various ingredients in the batch is formed due to the felting action of the mineral. The resulting product was found to be warmer to the touch, which is due to the superior heat insulating properties of the asbestine. It may also be

mentioned that asbestine has been found to be well suited for manufacturing ground cork bricks, elastic inlays for shoes made from cork powder and rubber latex.

An examination of the large list of substances that are used for filling rubber will reveal one condition, which troubles the rubber maker perhaps more than anything else that he comes in contact with in his manufacturing process. That is, that not only does the properties of the finished product vary greatly with the character of the filler used, but it also varies considerably with various grades of the same filler. It is very annoying to the rubber man to have to use products which vary so much in their physical properties and sometimes in their chemical properties as well as the average filler. For example, magnesium carbonate is a filler which is employed in making many rubber articles. It gives good results but these results depend on the basicity of the substance. The unfortunate part is that the basicity is not always the same.

Variations are also encountered when using a natural product and then substituting this by an artificially made product of the same chemical properties. This is particularly evident in the case of natural and precipitated barium sulphate. The precipitated material when used under exactly the same conditions as the natural product appeared to give a stronger vulcanized rubber. The principal reason for the difference that exists between the results obtained with the same filler is the varying sizes of the particles of the substance.

Carbon Blacks

Differences are also noted when using fillers which have been prepared by different manufacturing methods. Perhaps the most important of the fillers in this respect are the carbon blacks. There are various processes for making carbon black and the properties of the finished product vary greatly in accordance with which one of these carbon blacks is used. Gas black, which is made by the incomplete combustion of natural gas, is deposited in a much finer state of division than ordinary lampblack or vegetable black which is made by the burning of oils in an insufficient supply of air. The gas black gives better results than the other forms of carbon black.

Characteristics of Some Fillers

Barytes is a common filler and because of its relatively great weight per unit volume is much used when the product is sold on the pound basis. But its action on the rubber is only that of diluent. It does not improve the qualities of the product. Lithopone has about the same effect. Various other fillers, such as zinc oxide, whiting, china clay and the like, possess the power of increasing the mechanical strength of the rubber, but only when used below a certain maximum proportion. Above that proportion they act like any diluent.

Thus for example zinc oxide can be used up to twenty volumes, in other words twenty per cent of the volume of the rubber used. China clay acts like zinc oxide. Fossil flour has a stiffening action on the rubber when used up to a proportion of thirty per cent of the volume of the rubber. Carbon black gives very good results and can be used even at as high a proportion as forty per cent by volume.

Tensile Properties and Particle Sizes

It is evident that it would be advantageous to establish a mathematical relationship between the size of the particles of the filler and the tensile properties of the finished, vulcanized rubber article. If this could be done, it would be easy to predetermine the properties of the finished rubber article and use a grade of filler that would give the desired results.

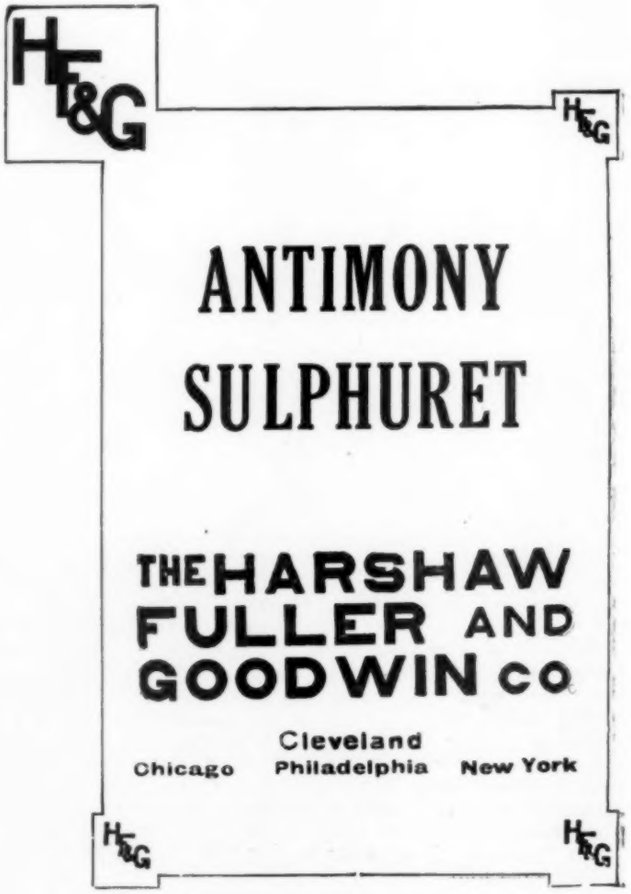
Unfortunately this cannot be done. Not that it is not possible to arrive at some sort of mathematical relation, but that this relation is influenced by a number of factors which tend to destroy its usefulness. One of the most important of these is the difficulty of determining the exact size of the particles of the filler. Some fillers are so fine that their dimensions cannot be measured with the ordinary microscope. Then again even if the size of the particles could be determined with high mathematical accuracy, the conclusions that would be drawn therefrom would depend to a large degree on the thoroughness with which the filler was dispersed throughout the rubber mass.

It is easy to see that this would be a very difficult matter to determine and that unless the filler were uniformly and completely distributed throughout the rubber mass the desired results would not be obtained. Another consideration which has been suggested as having an effect on the properties of the vulcanized article is the shape of the particles of the filler. A substance like magnesium carbonate of micro-crystalline structure would perhaps give different results than an amorphous substance of equal size of particles. It is also possible that a chemically inert filler, or rather a filler that is regarded to be chemically inert, may have some effect on the vulcanizing process which another filler of equal particle dimensions has not.

Conclusions

From the foregoing it is therefore evident that although the size of the particles of a filler is a very important factor in determining the properties of the finished vulcanized product, nevertheless it cannot be held that it is the only factor that possesses such an influence. Hence it must not be expected that the same results will be obtained with fillers of equal size of particles. It can however be considered as corroborated in every way that when all other things are equal the filler that is composed of smaller particles will give a vulcanized product of greater mechanical strength than the one whose particles are coarser.

In conclusion it must be mentioned again that the subject of fillers is one that should be given careful attention by every rubber man. There are still many problems and questions connected therewith that require solution. It is still not perfectly clear just what happens to the filler in the rubber mixture. The technical end of the subject also requires study and experimentation, for example, along the lines of developing a process or machine that will positively assure a perfectly uniform and complete dispersion of the filler throughout the rubber mass no matter what its character may be. Perhaps the direct latex vulcanization process points to the solution of this problem. There is no question but that a thorough mixture of a liquid and solid can be obtained.

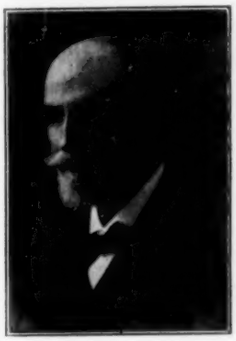


VULCANIZATION & ACCELERATORS

By Andre Dubosc

PART 1 (*CONTINUED*)

Theory of Vulcanization



The Results of Stevens' Experiments--Difference Between the Findings of Harries, Fontrobert and Stevens—Introduction to the Creditable Theory Propounded by M. Dubosc to Explain Vulcanization

HARRIES has indicated that these conditions under which the vulcanization was carried out were entirely analagous to those that exist in the manufacture of tubes. He forgot that the mixtures from which the air tubes are prepared contain considerably more sulphur, accelerators and sulphide of antimony, which facilitate the transmission of the heat through the rubber mass.

Stevens repeated the experiment that was made by Harries, and in this test he used rubber dises, which had a thickness of half to one millimeter. The vulcanization of these rubber samples was accomplished at a temperature of 145 degrees for a period of thirty minutes. On the other hand in the control test the time of the vulcanization was reduced to nineteen minutes. Then, due to the fact that the para gum used in these experiments, was of different origin, another test was made with plantation rubber in which the vulcanization was carried out at a high rate of speed. The different samples of rubber were then subjected to acetone extraction for periods of one, two, four and nine weeks. Then the sulphur that was combined with the rubber molecule was determined. In this manner the following results were obtained:

Duration of the acetone extraction	Vulcanization for thirty minutes per cent of combined sulphur	Vulcanization for nineteen minutes per cent of combined sulphur
PARA A		
(1) One week.	1.54	0.94
(2) Two weeks.	1.54	0.96
Four weeks	1.47	0.95
Nine weeks	1.55	0.96
PARA B		
(3) Two weeks	1.11	0.67
(4) Nine weeks	1.08	0.70
PARA C		
(5) Two weeks	2.69	1.53
(6) Nine weeks	2.39	1.46

When the different varieties of rubber were subjected to physical testing, the following results were obtained:

Number.	Duration of Vulcanization	Breaking load in grams per square millimeter	Maximum elongation per cent
1	30 minutes	830	1070
2.	19 minutes	490	1120
3.	30 minutes	750	1100
4.	19 minutes	290	1220
5.	30 minutes	1300	1080
6.	19 minutes	890	1120

An examination of the results, which are given in the above tabulations, shows that the load which produced rupture in the case of sample number 5 is slightly less than that which is generally obtained with a para rubber which has been subjected to complete vulcanization. This sample contains 2.69 per cent of sulphur which is combined with the rubber molecule. On the other hand a rubber which is completely vulcanized generally contains from 2. 8 to three per cent of combined sulphur.

The breaking loads in the case of samples three and one are scarcely as great as half of the figure which is ordinarily taken to be the average breaking strength of a completely vulcanized rubber. The maximum elongation of the vulcanized rubber samples at the moment of rupture bears a perfect relation to the breaking load itself, and tends to diminish as the breaking load increases. Hence in a general manner it is possible to state that samples one and three correspond to a rubber which has been moderately under-vuulcanized.

All the samples, and this includes even those that have been vulcanized for a period of nineteen minutes, swell up when placed in solvents, but do not dissolve in them. The results that were obtained on analysis of the rubber samples clearly indicate that, within the limit of the accuracy of the method for the determination of the weight of sulphur present in thin rubber sheets, the entire amount of what might be called the free sulphur is extracted in two weeks. It also follows that the seven additional weeks of extraction are with but little effect on the vulcanized rubber samples. These results are in total disagreement with those obtained in the experiments carried out by Harries and Fontrobert.

Differences between the Results

The three samples of rubber, which were subjected to a rough vulcanization treatment at a temperature of 145 degrees for a period of thirty minutes by Stevens, contained more than one per cent of combined sulphur after an extraction which lasted over nine weeks. Those prepared by Harries and Fontrobert contained only 0.29 per cent of rubber under like conditions. When the time of the vulcanization was reduced to nineteen minutes, the quantity of combined sulphur was found to be in the case of Stevens' experiments more than double that which was found in the experiments of Harries and Fontrobert.

Was the quality of the rubber that was used by these chemists of very poor grade or was the vulcanization carried out too gently? It must be remembered that the thickness of the dises of rubber that were employed in making the experiments, the short duration of the vulcanization process resulted in only a partial transformation of the raw gum into the vulcanized product.

When a normal grade of rubber was used, it appeared to be possible to obtain a product which possessed all the properties of a vulcanized rubber without an appreciable proportion of the sulphur becoming insoluble in the acetone solvent. And then again it appeared certain that the sulphur did actually combine in chemical combination with the rubber molecule. In this case the theory, which says that the vulcanization of rubber is simply the passage of the rubber molecule from the meta-stable form to the stable form, seems to be founded on facts which can scarcely be substantiated. This conclusion is not based on the presumption that this passage of the rubber molecule from one state into another cannot take place, but that it is always accomplished by a chemical combination of a portion of the rubber with sulphur.

(*Continued on Page* 51)

While you are giving—give health

THE greatest gift of all is health. You can give that priceless treasure of health to many this Christmas. Buy Christmas Seals. Everywhere are solitary sufferers and whole families stricken by the Great White Plague. Often they have no help except that furnished by the Tuberculosis Associations, which are financed by the annual sale of Christmas Seals.

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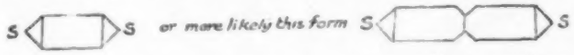
STAMP OUT TUBERCULOSIS WITH CHRISTMAS SEALS

THE NATIONAL, STATE, AND LOCAL TUBERCULOSIS ASSOCIATIONS OF THE UNITED STATES

(*Continued from Page* 51)

According to the chemist, Hubner, the final product of the vulcanization of rubber is a disulphide which possesses the following graphical formula:



In the process of vulcanization, an intermediate product is also formed, a monosulphide of rubber which has the following graphical formula:

Thus soft rubber and ebonite rubber of commercial grades are mixtures of the following ingredients, according to Hubner: (1) virgin rubber; (2) polyprene monosulphide; (3) polyprene disulphide.

In order to demonstrate the well founded assumptions on which this theory is based, Hubner states the fact that the disulphide of rubber does not combine in any manner with bromine. Now this negative reaction is contested by a large number of rubber chemists and particularly by Axelrod.

The Dubosc Theory

The theory of the vulcanization of rubber, which I take the liberty to propound is based principally on the change to which crystallized sulphur must be subjected before it is first absorbed by the gum, and with which it finally enters into a chemical combination.

The changes in the state of the sulphur should not result in any astonishment for that substance is capable of existing in a number of allotropic forms. If it is assumed what role the sulphur is called upon to play in the vulcanization process, namely that it is to enter into chemical combination with the rubber molecule, then it follows that the state in which the sulphur exists is of much greater importance than what one might suppose at first glance.

It is probable—and moreover, it is held to be true by the writer—that the phenomena that surround the acceleration of the vulcanization of rubber are due to the allotropic modifications of the metalloid, sulphur, which are produced through the influence of the accelerators. These substances act as catalysts, and in combination with the sulphur, they form intermediate unstable products.

Sulphur possesses the property of existing in several allotropic forms of which four are most interesting. There are two crystalline states and two amorphous states. If sulphur is dissolved in carbon disulphide and if the solvent is permitted to evaporate, crystals of sulphur are deposited which have an octahedral shape, which belong to the orthorhombic system. This is the variety of sulphur which is most stable at the ordinary temperatures. The sulphur of commerce and milk of sulphur obtained by chemical reaction are of the same type and differ only in the magnitude of the individual crystals.

The Varieties of Sulphur

If sulphur is heated to the point of fusion—the heating being done in a crucible—and if the mass of sulphur is then permitted to cool off gradually, the temperature is reduced at first at the surface of molten mass and crystals are formed which gradually cross over into the central region of the mass which is still in the liquid condition. On breaking the upper crust which has formed on the mass of sulphur and removing the excess liquid sulphur, there will be found a mass of crystals of needle-like form, of amber color, possessed of considerable flexibility, which belong to the monoclinic system.

The monoclinic crystalline variety of sulphur is unstable at the ordinary temperatures and it does not take much time for them to be transformed into opaque beads, which are composed of small octahedral, orthorhombic crystals. Thus the crystalline form of the sulphur returns to its original condition, which has been described above.

In the next installment the personal theory of Andre Dubosc, author of this commendable series, will be continued. M. Dubosc's theory of vulcanization is described in such minute detail that every rubber chemist must give it some credence, if, in fact, he does not accept it without argument in its entirety. We hope to be able to complete the Dubosc theory with the next issue.—THE EDITOR.

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EDITOR'S REVIEW DESK

Trade Catalogs **Books** **Articles**

REPUBLIC HOSE, 6" x 8¾". 44 pp. The Republic Rubber Co., Youngstown, Ohio.

Twenty kinds of hose for as many purposes are described and illustrated in this handsome catalog, which is a credit to the Republic company. The hose manufactured by this company combines the best of material with the best type of workmanship. The specifications for each hose have been carefully prepared from data collected with reference to hose under varying conditions and from exhaustive experiments carried on in the Republic laboratories.

• • •

RUBBERWARE SALES. Autumn Edition, 1924. Edited by Fordyce Jones. Reliance Rubber Co., Ltd., 212 Upper Thames St., London, E.C.4.

Much space is devoted in this interesting and well-prepared bulletin, which is distributed to the rubber trade in Great Britain, to Reliance products made by a new process. These goods are made by what has been christened the "Vital" process in which the rubber is lightly compounded with certain chemicals. Instead of being reduced to a solution as in the dipping process, it is used in a plastic state and the product is vulcanized in a few minutes at the low steam pressure of 20 pound per square inch.

The resultant product is transparent. It is said to possess many additional advantages due to the fact that the rubber has not been over-milled, scorched or injured by mechanical operation. Instead of being heated to a degree where depolymerization sets in, it has been lightly milled and lightly vulcanized. Products manufactured by the new process, upon which patents are pending, are claimed to possess a higher tensile strength and more vitality than has yet been known. Laboratory samples up to 5,400 lbs. tensile strength have been made.

• • •

JONES GEARS. Catalog No. 29. 5¼" x 7½". 222 pp. and board cover. W. A. Jones Foundry & Machine Co., 4401-51 West Roosevelt Road, Chicago, Ill.

This catalog deals with power transmitting machinery and its accessories. The various types of cut gears, including spur, bevel, mitre, worm, rawhide and bakelite pinions are listed as well as spur, bevel, mitre and worm molded tooth gears. Sections are devoted to spur gear speed reducers and worm gear speed reducers. Many pages are devoted to general engineering data and the catalog is completed with an index.

In addition to the gears listed, the company is in a position to furnish other types and sizes to be made in bronze, fibre, etc.

• • •

CONSISTENCY OF RUBBER-BENZENE SOLUTIONS. By Winslow H. Herschel, Bureau of Standards, Washington, D. C. Published in the September issue of *Industrial & Engineering Chemistry*.

Although during and after the process of vulcanization the reactions of rubber cannot be known from determinations of relative viscosity, this test, in combination with others, has its value. In the method employed at the rubber experimental stations, where the Ostwald viscometer is used, relative viscosity is defined as the ratio of time of flow of the rubber solution to the time of flow of benzene at the same temperature of 30 deg. C. In distinguishing between viscuous and plastic materials, it must be remembered that a single numerical value can be used to express viscosity, but the consistency of plastic material must be shown by an equation or some other definite symbol.

True solutions and mixtures of miscible liquids will be viscuous, but mixtures of a liquid with powder or finely divided material will be plastic. Where doubt exists, a series of tests should be undertaken, each test to be at a different rate of shear. If the standardization of the rate of shear is effected, different laboratories may be able to show the same numerical results, but the difference between the rate of flow and the producing force cannot be discovered with one test.

The determination of the consistency of benzene solutions of rubber should be found through tests that will allow the distinction between viscuous and plastic material to be noted and the results of such tests should be expressed in poises when the solution is viscuous. The consistency of plastic materials, such as benzene solutions of unmilled rubber, require two numerical values for its expression.

• • •

POPULATION'S PURCHASING POWER. 50 pp. Compiled and published by the Domestic Distribution Department of the Chamber of Commerce of the United States, Washington.

This valuable pamphlet, which contains statistics which afford a key to the purchasing power of the population in 31 distributing centers throughout the United States, has been prepared to answer the question "How much of a given commodity can a city buy?"

Tables used are based on the 1920 census statistics and on statistics compiled by the Department of Labor showing the character of the population of the various centers and the average per capita consumption. By simple calculation these tables afford a method of estimating the consuming capacity of 31 centers, not only for commodities but for many specified articles. This information should prove of value to rubber manufacturers and distributors in fixing sales quotas.

The centers for which statistics are given are Atlanta, Baltimore, Birmingham, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Houston, Indianapolis, Jacksonville, Kansas City, Los Angeles, Memphis, Minneapolis, St. Paul, Mobile, New Orleans, New York, Norfolk, Philadelphia, Pittsburg, Portland, Me.; Portland, Ore.; Richmond, St. Louis, San Francisco, Oakland, Savannah, Seattle, Scranton.

Copies of the pamphlet may be obtained from the United States Chamber of Commerce.

• • •

THE ANNUAL AUDIT. 3½" x 6". Issued by the Policyholders' Service Bureau, Metropolitan Life Insurance Co.

This booklet, the final one in a series of eight, gives the result of an inquiry made to a limited number of Metropolitan Group Policyholders on the annual audit. Its purpose was to ascertain the benefits professional accountants believe accrue therefrom, the means whereby the best results may be obtained and the furnishing of an approved form of Profit and Loss Account and a Balance Sheet. The outcome of this inquiry is summed up in the leaflet, accompanying which are the Profit and Loss Account and Balance Sheet forms.

• • •

TYCOS INSTRUMENTS. 7½" x 10½". For Steam Power Plants. Electric Contact Temperature Controls. Recording and Index Thermometers. 52, 23 and 60 pp. respectively, Taylor Instrument Companies, Rochester, N. Y.

The importance of keeping a careful record of temperatures maintained for every minute of operation in industrial processes is fully recognized because there are predetermined limits within which the temperature must be maintained for a given length of time and any variation will often damage

(*Continued on Page* 62)

MARKETS

Cottons and Fabrics

NEW YORK, Oct. 15, 1924

Following our last report there were violent fluctuations both upward and downward in the cotton market but the general trend was upward until the 3rd. Indications of a more general liquidation of the accumulated long interest than had been in evidence at any time since the issuance of the Government report on Sept. 23 were seen. The indicated crop as a result of Sept. 16 condition averages started an upward swing of prices and cotton gained more than a cent a pound during the week.

It was still claimed that domestic spinners are buying spots sparingly but it is impossible to conceal the fact that foreign spinners are absorbing American cotton at a rapid rate. During the week ended Oct. 4 exports reached 305,049 bales, bringing the exports for the season up to 1,048,200 bales as compared with 972,194 bales exported during the corresponding period last season.

On Oct. 8 the Department of Agriculture forecast a total production of 12,499,000 based on the condition of the plants on the 1st. The condition of the crop on Oct. 1 was 53.5 per cent of normal, indicating a yield per acre of 149.2 pounds. Although the Government reduced its estimate almost 500,000 bales for the last three reports, a decrease of only 97,000 bales for the report of the 8th was less than expected, resulting in a sharp decline.

PLENTY OF COTTON PREDICTED

Everett F. Buffington, head of E. F. Buffington & Co., New Bedford cotton merchants, who has just returned from a month's tour of the cotton belt as an official representative of the United States Department of Agriculture recently stated: "Cotton manufacturers need have no fear of a cotton famine. There will be plenty of cotton raised in this country this year—all that can be used, and more. In fact, if the date of the first killing frosts should be late this year in the Southern States we could easily have the biggest crop that was ever raised."

Liquidation continued on a liberal scale the following day and caused a further decline of 20 to 34 points in prices. The bulk of the day's business was done within 10 points of 23¾ for the December position. On the 10th December reached a low of 23.47, which was 222 points under the high level of the 8th.

The fall in prices was probably helped by the announcement by the Census Bureau following the crop report, that ginnings prior to Oct. 1 have totaled 4,525,520 running bales. This was much larger than the trade had anticipated and bore out the Government's estimate of 12,499,000 bales.

Those who are well versed in cotton problems do not trust the report of the Department of Agriculture and have not

(Continued on Page 56)

J. H. LANE & CO.

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MANUFACTURERS OF TIRE FABRICS

This group of Mills is thoroughly equipped to produce coarse builders, breakers and chafers in all grades of cotton, in yarn numbers ranging from 4's to 30's in order to meet the demand for coarser yarns and lower cost fabrics.

LAWRENCE & CO., SELLING AGENTS

89 Franklin St., Boston **24 Thomas St., New York**

Cotton Markets

(Continued from Page 55)

trusted it for a long time. It is said to be held in contempt in English and other foreign markets. It is rejected by cotton interests in the south and by manufacturers and traders in the north. The Government's crop estimate has moved steadily downward while private estimates have moved steadily upward.

On the 14th a formidable volume of sales in the south brought a decline of one cent a pound, closing at the bottom with net loss of 95 to 102 points.

New York Cotton Prices

	Open	High	Low	Last Sale	Close Oct. 1
October	23.3	23.57	23.95	23.01	25.65
December	22.38	22.71	22.09	22.18	24.95
January	22.46	22.79	22.18	22.28	24.97
March	22.70	23.11	22.55	22.63	25.22
May	23.00	23.35	22.76	22. 2	25.45

TIRE FABRICS

It was estimated that inquiries for tire fabrics totaled approximately 900,000 pounds for the week ended October 11. About one-third of these inquiries developed into contracts, with deliveries to begin in January and to run through June. Little interest was reported in spot goods, with the quantities desired forthcoming. But although mills can supply their customers with spot fabrics in a fairly satisfactory way, there is no considerable surplus of goods available. Many mills are sold up to the close of the year but have been able to handle some new business, especially when it comes from steady customers.

Overproduction Feared

Rumors from Akron of possible curtailment in production might soon set in were heard during the last few days. For several months tire companies have been operating along steady lines and unless production is soon curtailed, it is the belief of a considerable number in the trade, they will again face over-production. Demand for tires at the present time is not sufficient to keep pace with current production.

Tire fabric prices are subject to concession on firm bids. Inquiries continue to be made for quantities ranging from 50,000 to 750,000 pounds. Tire manufacturers, it is said, have begun to realize that they must cover their requirements if they are to have fabric supplies at the right time.

CORD FABRICS				
Combed Sakellarides			Nominal	
Combed Peeler	lb.		Nominal	
Carded Peeler	lb.	.53	@	.53
Combed Egyptian uppers	lb.	.72	@	.75
Carded Egyptian uppers	lb.	.62	@	.67
SQUARE WOVEN				
17¼-ounce Egyptian uppers, combed	lb.		Nominal	
17¼-ounce Egyptian uppers, carded	lb.	.60	@	.65
17¼-ounce Sakellarides, combed	lb		Nominal	
17¼-ounce Peeler, carded	lb.	.51	@	.54

Ducks—The decline in the price of raw cotton was not reflected in cotton ducks. The leading mills are disposed to keep prices unchanged as far as competition will allow. But the volume of business has been limited because consumers seem to prefer to wait before ordering further supplies. A substantial amount of inquiry for army duck was reported in the heavy goods market a few days ago and mills making the poorer grades were reported to be in a position to take a fair amount of additional business.

Burlaps—The largest burlap primary price advance this year quickened buying interest and accounted for improved sales. The business was principally in afloat lights, although sellers sold many lots of October shipments. Higher prices tended to restrict interest in offerings but a few traders sold while they had the opportunity to take a profit and their offerings helped to keep the market moderately supplied with goods. Buying was principally confined to speculators. Local prices did not reflect the full primary advance. The sharp Calcutta advance reflected a speculative movement in that market.

SHEETINGS				
40-inch 2.50-yard	yd.	.16	@	—
40-inch 2.85-yard	yd.	.14	@	—
40-inch 3.15-yard	yd.	.14	@	—
40-inch 3.60-yard	yd.	.12	@	—
40-inch 3.75-yard	yd.	.10¾	@	.11
40-inch 4.25-yard	yd.	.09¾	@	.10
DUCKS				
Belting	lb.	.42	@	.44
Hose	lb.	.42	@	.44
Enameling	lb.	.46	@	.51
Shoe Ducks	lb.	.48	@	.51
Single filling	lb.	.19	@	.22½
Double filling	lb.	.22	@	.23½

Do You Read

THE MARKET PLACE

BURLAPS (Carload Lots)				
7½-ounce 40-inch		8.10	@	8.15
8 -ounce 40-inch		8.20	@	8.25
10 -ounce 40-inch		10.00	@	—
10½-ounce 40-inch		10.00	@	10.15
DRILLS				
37-inch 2.75-yard	yd.	.14½	@	—
37-inch 3.00-yard	yd.	.13½	@	—
37-inch 3.25-yard	yd.	.12½	@	—
37-inch 3.50-yard	yd.	.11¼	@	—
37-inch 3.95-yard	yd.	.10¼	@	.10
OSNABURGS				
30-inch 7-ounce		.14	@	.14½
40-inch 7-ounce		.15½	@	.16

Reclaimed Rubber

NEW YORK, October 15, 1924

Demand from rubber manufacturers continues to be very strong with no indication of a let-up. The market is strong and prices continue firm. There has been a slight revison upwards in quotations which are now as follows:

Floating Tube	.14	@	.14¼
Friction, uncured	.23	@	.24
Boots and Shoes (unwashed)	.09	@	.09¼
Boots and Shoes (washed)	.12½	@	.13
Mechanical	.09	@	.09½
Hose	.09½	@	.10
Tires, truck	.08	@	.08¼
Tires, auto, black	.09	@	.09¼
Black (washed)	.10	@	.10½
White	.13¼	@	.13¾
Dark Gray	.09½	@	.09¾
Light Gray	.10½	@	.10¾

Scrap Rubber

NEW YORK, October 15, 1924

Due to the strong position of the crude rubber market, scrap rubber prices have advanced. Business in this market has been picking up in the past fortnight and the improved demand, if it continues, is expected to send the prices still higher. Since our last report eight grades have shown an increase in price. Most of the large dealers are well pleased with the volume of business being booked and express optimism regarding the near future.

Prices of this date are as follows:

Auto tire peelings	.01¼	@	.01½
Standard White auto ton	22.00	@	25.00
Mixed auto ton	16.00	@	18.00
Bicycle tires ton	16.00	@	18.00
Clean solid truck tires	.01¼	@	.01½
Boots and shoes	.02½	@	.02⅝
Arctics, untrimmed	.01¼	@	.01½
Arctics, trimmed	.01½	@	.01¾
Inner tubes, No. 1	.04½	@	.05
Inner tubes, compounded	.02¾	@	.03
Inner tubes, red	.02¾	@	.03
Battery jars, clean hard rubber	.02¼	@	.02½
Air Brake Hose ton	13.00	@	15.00
Rubber Hose ton	9.00	@	10.00

TIRE FABRICS

OF EVERY DESCRIPTION

TAYLOR, ARMITAGE & EAGLES Inc.

Equitable Building, 120 Broadway, New York

SEA ISLANDS EGYPTIANS PEELERS

FABRICS TO SPECIFICATION

AMERICAN COTTON FABRIC CORPORATION

CHEMICALS & COMPOUNDING INGREDIENTS

Accelerators — Colors — M.R. — Compounding Ingredients
Softeners — Vulcanizing Ingredients — Rubber Substitutes

NEW YORK, October 16, 1924—Business continues to be excellent according to dealers and manufacturers. Asbestine is moving steadily; lithopone contracts are being made for next year; carbon black keenly competitive. Prices in a number of items have changed slightly, mostly upwards.

ACCELERATORS

Organic

Aldehyde ammonia, crystals	lb.	$ .95 @	1.00
Aniline oil, drums	lb.	.17 @	.17½
Diphenylguanidine	lb.	1.10 @	1.20
Excelle-ex,	lb.	.40 @	.45
Formaldehyde-Aniline	lb.	.42½ @	—
Hexamethylene-tetramine	lb.	.85 @	—
Paraphenylenediamine	lb.	1.40 @	1.50
Super-Sulphur No. 1	lb.	.50 @	.60
Super-Sulphur No. 2	lb.	.25 @	.35
Tetramethyl—Thiuramdisulphide	lb.	6.00 @	—
Thiocarbanilide, kegs	lb.	.26 @	.32

Inorganic

Lead, sublimed blue	lb.	.09½ @	—
Lead, white	lb.	.09½ @	—
Litharge, domestic	lb.	.10½ @	—
Lime, superfine	lb.	.01½ @	.02
Magnesia, calcined, light,	lb.	.24 @	.25
extra light	lb.	.45 @	.60
heavy	lb.	.04 @	.05

COLORS

Blacks

Arrow "Aerfloted"	lb.	.05½ @	.09
Bone Black	lb.	.08 @	.11
Carbon "	lb.	.07 @	.11
Drop "	lb.	.07½ @	.10
Ivory "	lb.	.15 @	.45
Lamp "	lb.	.12 @	.40
Micronex	lb.	.08 @	.12
Thermatomic carbon	lb.	.04 @	.08

Blues

Cobalt	lb.	.21 @	.26
Prussian	lb.	.37 @	.39
Ultramarine	lb.	.06 @	.35

Browns

Iron oxide	lb.	.03½ @	.14
Sienna, Italian,	lb.	.04¼ @	.14
Umber, Turkey	lb.	.04½ @	.05
Vandyke, domestic	lb.	.03½ @	.04

Greens

Chrome, light	lb.	.29½ @	.31
medium	lb	.32 @	.35
dark	lb.	.35 @	.38
Commercial	lb.	.10 @	.10½

Reds

Antimony crimson, 15/17 F.S.	lb.	.35 @	.39
sulphur free	lb.	.45 @	.60
golden, 15/17 F.S.	lb.	.16 @	.19
calcium and sulphur free	lb.	.40 @	—
red sulph.15-17 F.S.	lb.	.16 @	.20
Indian, English	lb.	.11 @	.12
Para toner	lb.	.95 @	1.00
commercial	lb.	.15 @	.18
Red oxide, reduced	lb.	.04 @	.12
pure	lb.	.12 @	.14
Toluidine toner	lb.	1.85 @	2.10
Venetian red	lb.	.02 @	.05½
Vermillion, quicksilver, English	lb.	1.25 @	1.35
domestic	lb.	.15 @	.25

Whites

Albalith	lb.	.06⅝ @	.06⅝
Aluminum bronze		.55 @	1.25
Lithopone Azolith	lb.	.06¼ @	—
Zinc Oxide—American Process XX red	lb.	.07¾ @	.08¼
Kadox, black label, bags, cars		.11⅝ @	.11⅞
blue " " "		.10⅝ @	.10⅞
red " " "		.09⅝ @	.09⅞
American Azo: ZZZ (lead free)	lb.	.07¾ @	.08¼
ZZ (under 5 per cent leaded)	lb.	.07 @	.07½
Z (8-10 per cent leaded)	lb.	.06¾ @	.07¼
Zinc Oxide—French Process White seal	lb.	.12¼ @	.12½
Green seal	lb.	.11 @	.11¼
Red seal	lb.	.09½ @	—

Yellows

Chrome, light		.17 @	.18
dark and medium	lb.	.17 @	.18
Cadmium Sulphide	lb.	1.75 @	2.50
Ocher, French medium	lb.	.02½ @	.02¼
domestic	lb.	.01½ @	.02½

COMPOUNDING INGREDIENTS

Aluminum Flake	ton	21.85 @	24.50
hydrate light	lb.	.17 @	.18
Ammonia carbonate	lb.	.13 @	.14½
Asbestine	ton	15.00 @	18.00
Barium carbonate	ton	63.00 @	65.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	15.00 @	18.00
Western prime white	ton	22.00 @	23.00
imported	ton	30.00 @	35.00
Basofor	lb.	.04¼ @	—
Blanc fixe, dry f.o.b. works	lb.	.04 @	.04½
Carrara filler	lb.	— @	—
Chalk, precipitated, extra light	lb.	.04¼ @	.05
heavy	lb.	.03¼ @	.04
Clay, China, domestic,	ton	12.00 @	15.00
Dixie	ton	20.00 @	35.00
Blue Ridge	ton	12.00 @	25.00
Langford	ton	12.00 @	26.00
Fossil flour	lb.	.03 @	.05
Glues, extra white	lb.	.22 @	.30
medium white	lb.	.20 @	.26
cabinet	lb.	.18 @	.28
cabinet low grade	lb.	.15 @	.18
common bone	lb.	.10½ @	.13
Graphite flake, bbls.	lb.	.06½ @	.12
Lump	lb.	.04 @	.10
Infusorial earth, powdered	ton	60.00 @	—
bolted	ton	65.00 @	—
Liquid latex	gal.	1.25 @	1.35
Magnesia, carbonate	lb.	.06½ @	.07
Mica, powdered	lb.	.07 @	.15
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	25.00
Starch, powdered	cwt.	3.97 @	4.07
Talc, domestic	ton	15.00 @	22.00
French	ton	18.00 @	25.00
French, high grade	ton	38.00 @	45.00
Italian	ton	47.00 @	58.00
Terra Alba	cwt.	1.25 @	2.00
Tripoli, white	lb.	.02 @	.02½
Whiting, commercial	cwt.	.85 @	1.15
gilder's bolted	cwt.	1.10 @	1.20
English cliffstone	cwt.	1.50 @	—
Paris whiteAmerican	cwt.	1.25 @	1.50
Quaker	ton	13.00 @	15.00
Sussex	ton	8.00 @	16.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	40.00 @	54.00
Hard hydrocarbon	ton	31.00 @	50.00
Soft hydrocarbon	ton	30.00 @	40.00
320/340 M. P. hydrocarbon (c. l. factory)	ton	45.00 @	50.00
300/310 M. P. hydrocarbon (c.l. factory)	ton	40.00 @	45.00
Syntro, granulated, M. R. (factory)	ton	55.00 @	70.00

SOFTENERS

Acids

Acetic, 28%	cwt.	3.38 @	—
Creavlic, 97%	gal.	.63 @	.68
95%		.61 @	.66
Muriatic, 20%	cwt.	.90 @	1.00
Nitric, 36 degrees	cwt.	4.25 @	4.50
Sulphuric, 60 degrees	ton	9.00 @	10.00
66 degrees	ton	14.00 @	15.00
Tartaric, crystals	lb.	.29 @	—

Alkalies

Caustic soda, 76%	cwt.	3.60 @	4.30
Soda ash, 58% C.L.	cwt.	1.43 @	1.45

Oils

Castor, No. 3, bbls.	lb.	.16 @	.18
Chinawood, bbls.	lb.	.16½ @	.16½
Corn, crude, bbls.	lb.	.12¼ @	—
refined	lb.	.13 @	—
Cottonseed, crude		.08¾ @	.09
Glycerine C.P. Drums	lb.	.19 @	.19½
Linseed, Raw C.L.	gal.	.97 @	—
Palm, Niger	lb.	.08 @	.08¼
Lagos	lb.	.08¼ @	.08½
Peanut,domestic,crude	lb.	.13 @	—
Petrolatum, white		.10 @	.10½
amber		.03¾ @	.04
dark amber	lb.	.03½ @	.03¾
Pine, steam distilled	lb.	.68 @	—
Rapeseed, refined	gal.	.90 @	1.00
blown	gal.	1.10 @	—
Rosin, first rectified	gal.	.40 @	.42
second rectified	gal.	.45 @	.47
Soya Bean, crude		.12¼ @	—
Tar, commercial	gal.	.30 @	.32

Resins and Pitches

Cumar resin, hard	lb.	.09 @	.10
soft	lb.	.09 @	.10
Parra M.R.	lb.	.06 @	.07
Tar Retort	bbl.	12.00 @	—
kiln burned	bbl.	12.00 @	—
Pitch, Burgundy	lb.	.65 @	.66
coal tar	gal.	.05 @	.06
pine	bbl.	6.00 @	—
Rosin, grade K	bbl.	6.85 @	—
Shellac, Superfine orange	lb.	.68 @	.69

Solvents

Acetone, drums C.L.	lb.	.17½ @	.18
Alcohol, denatured, No. 1 bbls.	gal.	.56 @	.60
Benzol, 90%	gal.	.23 @	—
pure		.25 @	—
Carbon bisulphide	lb.	.06 @	.07
tetrachloride	lb.	.06½ @	.07
Dimethylaniline	lb.	.36 @	.37
Motor gasoline, steel bbls.	gal.	.14 @	—
Naptha, V. M. & P.	gal.	.16 @	—
Toluene	gal.	.31 @	—
Turpentine, spirits	gal.	.87 @	.89
wood	gal.	.82 @	.83

Waxes

Bayberry	lb.	.21 @	.22
Beeswax	lb.	.43 @	.47
Carnauba, No. 1	lb.	.34 @	.39
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffine White A.M.P.	lb.	.05⅞ @	—
Yellow A.M.P.	lb.	.05¾ @	—
Sweet wax	lb.	.12 @	—

SUBSTITUTES

Black	lb.	.08½ @	.14
White	lb.	.09 @	.15
Brown	lb.	.10 @	.15
Brown factice	lb.	.10 @	.15
White factice	lb.	.09½ @	.16

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.18 @	.20
Sulphur Chloride (drums)	lb.	.04 @	.05
Sulphur flour Commercial bags,	cwt.	1.35 @	1.70
" bbls.	cwt.	1.70 @	—
Superfine, bags,	cwt.	2.00 @	2.40
" bbls.	cwt.	2.30 @	2.75
100% pure, refined, bags	cwt.	2.35 @	2.65
bbls.	cwt.	2.60 @	2.90

The Market Place

WHERE TO OBTAIN

Machinery, fabrics, chemicals, compounding ingredients, crude and reclaimed rubber, consulting chemical and engineering services, etc.

ACCELERATORS—X L O and di-phenylguanidine.

Dovan Chemical Corp.

30 Church St. New York

ANTIMONY Pentasulphide, golden and crimson, very fine, pure.

Rare Metal Products Co.
Tyler Patterson Co.

Belleville, N. J. Cleveland, Ohio

ASBESTINE—Specially prepared for use in Rubber. Send for liberal working sample.

SOLE PRODUCERS

International Pulp Co.

41 Park Row, New York City

BARYTES and other chemicals for the rubber trade.

Cooper & Cooper, Inc.

23 Cliff St. New York City

BARYTES—Resists action of acids, alkalis, oils; 300 mesh.

National Pigments & Chemical Co.

St. Louis, Mo.

BEAD CABLES— National Flat Woven and Pratt Patent Bead Cables.

National Standard Co.

Niles, Mich.

BOLTON BIAS CUTTER

Cuts cord or flat woven fabrics with equal ease and precision. In use all over the world.

Spadone Machine Co., Inc.

15 Park Row New York

CALENDERS–Embossing, for artificial leather, oil cloth etc.

Textile-Finishing Machinery Co.

83 Exchange Place, Providence, R. I.

To Our Readers

Manufacturers and dealers listed in THE MARKET PLACE are those on whom you can rely for prompt and courteous treatment for all your raw material and equipment requirements. We feel confident that we are rendering both our readers and our advertisers a real service in publishing these listings and should you desire information on other firms or products, the Service Department of THE RUBBER AGE will be pleased to assist you at all times.

CARBON BLACK–*Micronex* the world's standard gas black, universally known as the "King of Rubber Pigments."

Binney & Smith Co.

41 East 42nd St. New York City

CARBON BLACK— in nine grades for the rubber industry.

Godfrey L. Cabot, Inc.

938-942 Old South Bldg. Boston
611 Metropolitan Bldg. Akron

CARBON BLACK–*Aerfloted* Arrow Black for rubber compounding. Standard for grit-free uniformity.

J. M. Huber, Inc.

130 West 42nd St. New York

CATALPO — The surest and greatest money-saving reinforcing pigment.

Moore & Munger

Columbia Building, New York City

CHEMICALS— Solvents and accelerators. *Clay, whiting* and other compounding materials.

E. L. Bullock & Sons, Inc.

99 John St. New York City

CHEMICALS and compounding ingredients for the rubber trade.

Harshaw, Fuller & Goodwin Co.

Cleveland, Ohio

CHEMICALS and compounding ingredients; Clay, Whiting, Accelerators, Mineral Rubber.

R. T. Vanderbilt Co.

50 East 42nd St. New York City

CHEMICALS and pigments for the rubber trade. Complete stocks carried.

Wishnick-Tumpeer Chemical Co.

Chicago Cleveland Brooklyn

CRUDE RUBBER — All Grades. Washed - Dried - Milled. *Send us Your Inquiries.*

Gibraltar Rubber Corp.

West New York, N. J.

CRUDE RUBBER — All grades. *A dependable concern* for your rubber requirements.

The Kahnheimer Co.

Akron, Ohio

THE MARKET PLACE Section Continued on Next Page.

ALL THE LEADERS

Are represented in this section. Purchasing agents can rely on the concerns listed as thoroughly reliable in every way.

The Market Place

DIXIE CARBON BLACK
Unexcelled in rubber work for toughness and resiliency.
United Oil & Natural Gas Products Corporation
30 Church St., New York City

FACTICE—Prevents blooming, makes colors fast and a smoother batch.
Stamford Rubber Supply Co.
Stamford, Conn.

MOLDS & CORES—Tire building machines; tire finishing stands; tubing machines; hydraulic presses.
The Akron Standard Mold Co.
Akron, Ohio

DRY KILN—for drying crude rubber and chemicals—Hunter Process.
Carrier Engineering Corporation
750 Frelinghuysen Ave. Newark, N. J.

GUAYULE—"Duro" Brand washed and dried ready for compounding.
Continental Rubber Co.
120 Broadway New York

MOLDS & CORES—for automobile tires; general machine work.
Kuhlke Machine Co.
Akron, Ohio

FABRIC BROKER—Spots and Contracts: Tire fabrics, Enameling ducks, Tube Wrapping Tapes.
H. Frank Jones
395 Broadway New York City

HARD RUBBER, quality hard rubber goods of every description.
Vulcanized Rubber Co.
251 Fourth Ave. New York City

RECLAIMED RUBBER—Uniformity, reliability, cleanliness.
Pequanoc Rubber Co.
Butler, N. J.

FABRICS—Tire fabrics, Egyptian—Peeler, Karded and Combed, Cord and Square.
Cabarrus Cotton Mills
(Cannon Mills, Inc.)
55 Worth St. New York
327 S. La Salle St. Chicago

HEEL BURRS—with central holes; flat and cupped.
J. H. Sessions & Son
279 Riverside Ave. Bristol, Conn.

RECLAIMED RUBBER—for all purposes.
Rubber Regenerating Co.
Naugatuck, Conn.

FABRICS—Tire fabrics—coarse builders, chafers, breakers in all grades.
New England Southern Mills
LAWRENCE & CO.
24 Thomas St. New York
Boston, Philadelphia, Chicago, St. Louis, San Francisco

METAL BRANDS, TAGS
Name Plates, Labels — Machinery for making.
Roovers Bros.
100 Schermerhorn St.
Brooklyn, N. Y.

RED OXIDE—A special grinding, guaranteed uniform in color and quality.
Joseph A. McNulty
114 Liberty St. New York City

FABRICS—Tire, cords, enameling ducks, drills, sheetings, osnaburgs.
J. H. Lane & Co.
250 West 57th St. New York City

YOUR NAME
in this space would be seen by Buyers, Chemists, Engineers and Executives in all rubber plants.
Write for full information

RUBBER—Crude and scrap, all grades.
H. Muehlstein & Co.
Liggett Bldg. New York
Akron, Chicago, Boston, Hoboken

FABRICS—Tire fabrics of every description, Sea Island, Egyptians, Peelers.
Taylor, Armitage & Eagles, Inc.
120 Broadway New York

RUBBER SUBSTITUTES
White, brown and black.
Carter Bell Mfg. Co.
150 Nassau St. New York

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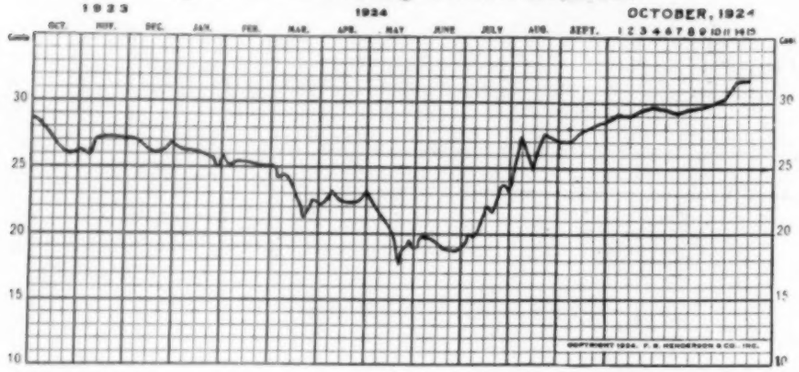
Prices of Ribbed Smoked Sheets at New York
Up to and Including October 15, 1924



Crude Rubber

NEW YORK, October 15, 1924

The highest point reached by crude rubber this year was reached yesterday when spot ribbed smoked sheets touched 32¼ cents. Business, however, was not done at this price, most transactions taking place at ½ to ¾ cents below, at which prices the market closed. Today's market showed a reaction and closings on sheets was 31½ for spot, October and November-December with January-March up ¼ cents.

From present indications production from the restricted area will be reduced on Nov. 1, unless the prices of the next few weeks bring the average for this quarter up to 1s. 3d. On Oct. 1, the average had been 1.77d. and an average for October of 1s. 5.04d. will have to be maintained to prevent the decrease in output to 50%.

Today's local market closed firm. London was firm and Singapore steady with futures weak. Prices follow.

NEW YORK MARKET

Plantations—			
Ribbed Smoked Sheets.			
Spot	.31½	@	—
October	.31½	@	—
Nov.-Dec.	.31½	@	—
January-March	.31¾	@	—
First Latex, crepe, spot	.31¾	@	—
Amber Crepe No. 1, spot	.31½	@	—
" " No. 2,	.30	@	—
" " No. 3,	.31¼	@	—
" " No. 4,	.31¾	@	—
Brown Crepe, Rolled	.30⅞	@	—
" " Clean, thin	.30¾	@	—
" " Specky	.30¼	@	—
Scrap, Colombo No. 1	.25	@	—
Pontianac—			
Prime Pressed	.14	@	—
Palembang	.08¾	@	—
Bangermassin	.06	@	.07
Sarawak	.08	@	—
Paras—			
Up-river Fine	.31½	@	—
" Medium	.29	@	—
" Coarse	.21	@	—
Islands, fine	.30	@	—
Madeira Fine	.32½	@	—
Acre Bolivian, fine	.31½	@	—
Cut Beni Bolivian, fine	.32½	@	—
Tapajos, fine	.29½	@	—
Caucho Ball—			
Upper, shipment	.21½	@	—
Centrals—			
Central, scrap, prime	.21	@	—
Corinto, scrap	.21	@	—
Esmeralda, sausage	.21	@	—
Guayule, w and d	.26	@	—
Africans—			
Benezuela, No. 1	.18	@	—
" No. 2	.17	@	—
Congo, upper, black	.25	@	—
" " red	.24	@	—
Kassai, Prime Red	.24	@	—
Balata—			
Block, Columbia	.54	@	.56
" Cuidad	.63	@	.64
Surinam, sheet	.76	@	.77
Gutta Percha—			
Siak	.18¼	@	—
Red Macassar	3.00	@	3.20
Chicle—			
Mexican, Yucatan	.65	@	.67

LONDON MARKET

Standard Ribbed Smoked Sheets—	
Spot	16¼d
October	16⅜
Nov.-Dec.	16½
Jan.-Mar.	16⅝

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—	
Spot	15¾d
October	15¾
Nov.-Dec.	15¾
Jan.-Mar.	15⅞

The Market Place

RUBBER TESTING APPARATUS
Bierer-Davis Rubber Aging Apparatus; Rubber Buffing Machine for preparing tensile strength samples.
Emerson Apparatus Co.
171 Tremont St., Melrose Highlands, Mass.

TIRE BUILDING EQUIPMENT
MOLDS & CORES
The Akron Rubber Mold & Machine Co.
Akron, Ohio

SOLVENTS — Accurately refined for the rubber industry.
Hartol Products Corporation
192 Market St. Newark, N. J.

VALVES— Tire valves, caps, insides, pressure gauges.
A. Schrader's Son, Inc.
Brooklyn, N. Y.

SULPHUR—*"Tire"* Brand Superfine; *"Tube"* Brand Velvet; quality Sulphur for the rubber trade.
Stauffer Chemical Co.,
of Texas.
Scanlon Bldg. San Francisco, Cal. Houston, Texas Chauncey, N. Y.

WHITING & PARIS WHITE
manufactured from *Genuine English Chalk* and *Cliffstone*—no adulterations.
Southwark Mfg. Co.
Camden New Jersey

THERMOMETERS–Recording, controlling temperature and pressure controllers.
American Schaeffer & Budenberg Corp.
Berry & South Fifth Sts., Brooklyn

ZINC OXIDES— A Z O, the Super Zinc.
American Zinc Sales Co.
P. O. Box 1428 Columbus, O.
Pierce Bldg. St. Louis
Prudence Bldg. New York

THERMOMETERS— Dial-Indicating, Recorders, Controllers, etc.
C. J. Tagliabue Mfg. Co.
18-88 Thirty-Third St.
Brooklyn, N. Y.

ZINC OXIDES — Including KADOX and "Albalith."
The New Jersey Zinc Sales Company
New York Pittsburgh Chicago
Cleveland San Francisco

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No. 5 of a series of six *5. Impurities*

What is Tar?

PINE TAR

Has Three Common Impurities.

Water-Carbon-Iron Stain

Water—Water is present in all pine tar—varying from one half to twenty or more percent.

In old fashion tar, the water is largely in emulsified form and very difficult to remove by gravity separation, the method most commonly used. Water in this form gives tar a yellowish shade which the pure tar does not have. Old fashion tar always contains a considerable amount of water.

Retort tar is usually sold on specifications requiring not more than 2% of water. Water in this kind of tar is not usually emulsified. Gravity separation is often successful but heat drying is sometimes necessary.

Carbon—The process by which tar is made reduces the wood fibre to charcoal. A certain amount of charcoal dust is entrained with the vapor and carried into the condensed oils or washed off the wood by the dripping oils which accounts for its presence. Old fashion and Bottom Draw-off tars, because of the manner of their production, contain more carbon than distilled tars.

Iron—This stain is the result of handling, storing and shipping in iron pipes and tanks. Modern plants use copper and brass stills and pipes and wood, brick or concrete pits or tanks. Tars containing not to exceed 2% of water (this is pyroligenous acid water) are not materially stained and darkened by shipment in clean tank cars.

PENSACOLA TAR & TURPENTINE CO.
GULL POINT, FLORIDA

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CAOUTCHOUC

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, of THE RUBBER AGE published semi-monthly at Highland, New York for October 1, 1924.

State of New York
County of New York } ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Peter P. Pinto, who, having been duly sworn according to law, deposes and says that he is the Business Manager of THE RUBBER AGE and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher Gardner Publishing Company, Inc., Highland, New York; Editor G. H. Trimingham, 225 Fourth Avenue, New York City; Managing Editor None; Business Manager Peter P. Pinto, 225 Fourth Avenue, New York City.

2. That the owner is: (If the publication is owned by an individual his name and address, or if owned by more than one individual the name and address of each, should be given below; if the publication is owned by a corporation the name of the corporation and the names and addresses of the stockholders owning or holding one per cent or more of the total amount of stock should be given.)

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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are:

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4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Peter P. Pinto, Business Manager.

Sworn to and subscribed before me this 29th day of September 1924.
[Seal.] MICHAEL F. PINTO
(My commission expires Oct. 9, 1925.)

REVIEW DESK

(*Continued from Page* 54)

the product seriously. Recording thermometers furnish automatically a complete record by writing in ink on a revolving paper chart the exact temperature during the entire operation.

Close control of temperature to conserve heat and insure uniformity of products may be effected by electric-contact temperature controls which maintain automatically the desired temperature within the limits of 40 deg. below zero and 1000 deg. F above.

These three catalogs have been carefully prepared. The various types of the many instruments manufactured by the Taylor company are illustrated and described. An index adds to the usefulness of two of them.

* * *

CRUDE RUBBER TESTING—RATE OF CURE. By C. W. Sanderson of the Fisk Rubber Co. Published in the September issue of *Industrial and Engineering Chemistry.*

A method for the determination of the rate of cure of crude rubber, which will allow this property to be established by one cure instead of a series, is the most desirable. It is possible to employ several methods in this test, but the one recommended is a single cure of 3 hours at 141 deg. C, run on the sample of 100 rubber to 10 sulphur. Usual methods to determine the full-stress strain data are used for testing the pieces, four being the number employed. The results are then averaged and one curve plotted. From this curve the slope is found by subtracting the per cent elongation at 386 kg., or 850 pounds, which equals 785, from the per cent elongation at 672 kg. (1480 pounds), which equals 870, and then dividing by $\frac{2}{5}$, the result being 34. The distance from the standard point is then determined. With the standard point taken at an elongation of 850 per cent at a load of 840 kg. (1850 pounds), the distance of the 3 hour cure is found to be 4.5 units on the per cent elongation. The results of a large number of tests shows that a difference of cure of 60 minutes produces a movement of 13.5 units, this making the difference of cure necessary to bring this rubber to the standard 20 minutes.

* * *

THE MATERIAL OF A THOUSAND USES; BAKELITE AND RADIO. Issued by General Bakelite Company, a division of the Bakelite Corporation, 8 West 40th St., and 247 Park Ave., New York, N. Y. Describing the application of the phenol condensation products, Bakelite, Condensite and Redmanol in general and in particular to radio. 24 pp 5½ x 7¾ illustrated in color; 16 pp 4 x 9.

The first booklet is designed to appeal to the public at large and is written in a clear, comprehensive manner. "Action illustrations" in three colors augment the text. Although the second booklet is also written to enjoy a wide appeal it is aimed primarily at that large class of persons who are interested in radio. It goes into greater technical detail as to the advantages of utilization in this capacity. A feature, which should interest readers who desire to draw comparisons between the physical properties of hard rubber and bakelite, is the table giving the specific properties of molded bakelite and bakelite plates, rods and tubes.

* * *

HYCOE BRAKE LINING. 3½" x 6". 32 pp. The Manhattan Rubber Manufacturing Co., Passaic, N. J.

This little handbook should be read by every owner and driver of a motor car as well as by every automobile mechanic. It contains valuable information on the care, repair and installation of brake lining.

Hycoe, the trade name of Manhattan Rubber Manufacturing Co. lining, is a dense, compact fabric composed of asbestos yarns, interspun with brass wires and impregnated with a special compound.